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EDITORIAL

THE PLAGUE AT NEW ORLEANS.

The splendid work of the U. S. Public Health Service is about to be concluded, so far as the plague in New Orleans is concerned. The last case of human plague was reported on September 8, 1915. Since then, New Orleans has been 80 per cent rat-proofed, and the work of making it 100 per cent goes on.

There are still rats at large, as the week ending September 22 showed 5,807 received at the laboratory of the Health Service, but no plague rat has been found since April 3, 1917. The total number of plague rats examined in the period of a little more than two years has been 353.

The remarkable thing about the campaign has been that, although there were some twenty-eight cases of plague in all, there has been no hysteria. There was no concealment; therefore prompt

and efficient segregation of the sick was possible, and there was no epidemic. The rest was intelligent and persistent enforcement of sanitary regulations governing the prevention of the disease.

The results are everywhere in evidence. New Orleans is cleaned and altogether healthier for the experience.

The continuous coöperation of the State and city health officials, the various business organizations and the large majority of the citizens themselves contributed no small part to the successful outcome.

It has been a magnificent example of efficient Federal administration of a problem which might otherwise have resulted differently.

CLEAN NEWSPAPER ADVERTISING.

So quietly has the State Board of Health operated the State law against improper advertising of fake medicines that the clean-up in the daily newspapers has not been sufficiently noticed.

Quite a while ago the New Orleans *Item* proposed and executed a wholesale reform. Now and then its intention has miscarried, but, on the whole, its pages have been clean.

Now the *Times-Picayune* has engaged to make its pages free of objectionable advertising, and it is a privilege to remark the absence of some of its old standbys.

The public still demands to be humbugged by patent medicines, but when the leading newspapers decline to publish advertisements which are misleading and so pretentious that they condemn themselves, reform must be on the way. The objectionable cure-alls and the obnoxious nostrums are no longer acceptable for advertising, and, with Federal and State legislation now protecting the public, the time may soon come when even the people themselves may learn that there must be a reason for this.

The newspapers have a various function in the home, and it is sane business to exclude from the pages of such that sort of advertising which in itself must cause question of the honesty of purpose in its other departments.

THE SOUTHERN MEDICAL ASSOCIATION.

In Memphis, November 12 to 15, will be held the eleventh annual meeting of the Southern Medical Association. This, which is the second largest medical organization of the United States,

had an attendance of over 1,800 at its meeting last year in Atlanta, and intends to surpass that number this year.

In addition to the usual line of papers and discussions, an interesting feature will be the meeting of the National Committee for the Eradication of Malaria, under the chairmanship of Dr. Rupert Blue, Surgeon General of the Public Health Service, which will form a part of the program of the Association.

Another feature of the meeting will consist of patriotic addresses by speakers of national reputation, and every effort will be made to shape the meeting into a patriotic convention.

We hope that all those of our physicians who can get off will make sure to visit Memphis, attend the meeting and help make it a great success, while profiting largely themselves.

DR. THOMAS SEILLES KENNEDY.

Dr. "Tom" Kennedy died on October 20 in New Orleans, his native city. He was one of our oldest practitioners and died in harness. The writer remembers him from the time that he was still called "Young Doctor Kennedy," because his father had been a well-known physician before him.

A practitioner interested especially in diseases of children, he was the pioneer in that line in the clinics of the Charity Hospital and taught that branch in the New Orleans Polyclinic for many years.

In addition, he was an educated gentleman, a student and lover of Shakespeare, whom he resembled to a sufficient extent to warrant the nickname of "Shakespeare," which had been given him by some of his intimates.

Of a gentle and jovial disposition, a man of ability and talent, he will be much missed.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE PRESENT STATUS OF INGUINAL HERNIAS.*

By E. DENEGRE MARTIN, M. D., F. A. C. S., New Orleans, La.

The evolution of surgery is interesting in all its branches, but in none more than that of hernia. Far be it from my purpose to attempt at this moment, and especially in the limited time allotted to me, to more than hint at the radical changes which scientific development has wrought in this particular field. My one desire is to impress upon you the undisputed fact that there can be no possible excuse in this age for any man wearing a truss. That such a prejudice existed against the operation prior to the open method of dealing with rupture is not astonishing, but it is deplorable that the truss-maker still thrives, with a mortality practically *nil,* and 95 per cent of cures reported.

Cutting operations, as well as the use of trusses, were employed in the earliest period of medicine. In the two decades from 1860 to 1880 we find many treatises on the subject by leading surgeons of that day, such as the suggestion of the injection of iodin, as practiced by Pancoast, the white-oak bark by Heaton-Gerdy's operation, with invagination of the sac, and the application of liq. ammonia to the surrounding tissues to produce inflammation and adhesions; the use of silver wire by Richardson, of New Orleans, and numerous others. Some of these operations were in vogue to a very recent date. The great objection to all of them was their inefficiency, as well as the risk attending them, and none contemplated more than the closing of the external ring. But in the decade from 1880 to 1890, when abdominal surgery was given such an impetus and it was no longer feared to open the abdominal cavity, a new era dawned for herniotomy, for free dissection of the structures involved became possible, and the repair of the distorted walls, as well as the high dissection of the sac and its extirpation and closure, could be practiced without fear of infection.

* Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18 and 19, 1917.

In 1889 these operations, which were devised for the closure of the external ring only, were substituted by what was known as the open method, which contemplated the repair of the abdominal wall. Nothing did more to popularize this method than the report of several hundred cases operated upon by Bassini, by his now well-known technic, first attempted in 1886, which, with some modifications of certain phases in isolated cases, has been universally adopted the world over. Bassini does not claim the sole credit of this method, but states that it is the culmination of important steps suggested by McEwen and others. It is not surprising that, up to this time, herniotomy was not popular with the layman. The surgeon had little to offer, besides the possibility of temporary relief, against the dangers of an anesthetic and the chance of infection. To the patient, the truss, with all its drawbacks and discomforts, held out an equally good chance, but none of these, at best were satisfactory, as shown by the hundreds put upon the market, the great majority adding to the distress of the wearer by compressing the cord, attenuating the muscles and enlarging the ring.

There were many cases which could not take chloroform, then so popular an anesthetic, and this difficulty was believed to have been overcome by the introduction, about this time (1890), of local analgesia with cocain. The toxicity of this drug was so great that the contra-indications for local operations were almost as great as those under general anesthetic. Since 1900, however, the herniotomies have increased rapidly. Not only is this to be attributed to the improved methods in vogue, but to the fact that no men who have hernias are being employed by manufacturing plants, railroads or the government, and are thereby barred from holding many good and important positions, as so many unscrupulous men had involved these corporations in heavy damage suits with claims of ruptures produced while in the pursuit of their duties. It is a well-established fact to-day that traumatic hernia is extremely rare, that the condition is found only in those in whom congenital defect exists, and is produced, not by a sudden strain or injury, but by continued intra-abdominal pressure, so weakening and dilating the internal ring that it may give way suddenly, producing what is apparently a traumatic hernia. You can well understand how common these suits were when it is remembered that statistics show that at least 12 per cent of all men suffer from some form

of hernia, and some state that in the aged it is as frequent as one in four; especially is this true of bubonocele, or the hernia of weakness, so termed by the French.

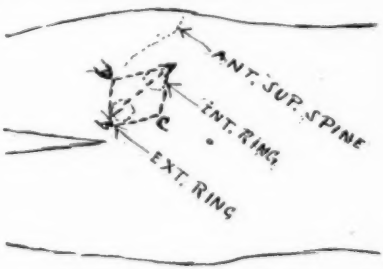
In 1905 the introduction of novocain by Einhorn removed the last obstacle to the operation. This wonderful drug has been a veritable boon to mankind. It is seven times less toxic than cocain, consequently can be used in larger doses and greater quantities, and never have I seen any reaction from its use. The employment of this drug, with the improved technic of infiltrating the tissues, has made me a convert to the local operation for hernia, and I shall now conclude by describing this technic as employed by all the members of our staff. We have used this method for the past two years, and in not a single instance within the past year have we had infection.

As the Bassini is ordinarily the operation of choice, I shall describe our technic for this operation; the injections, however, are the same for all others.

In order to better understand the procedure, we must first study the anatomy of the parts and the course of the several branches of nerves which supply the deep structures as well as the integument.

The inguinal canal is bounded by the internal oblique and the tranversalis internally, Poupart's ligament externally, the external oblique and skin above, and contains the spermatic cord and sac when hernia exists. These tissues are supplied by the ilio-hypogastric, the ilio-inguinal and the genito-crural nerves. The hypogastric branch, with the iliac branch, pierces the internal oblique muscles immediately above the crest of the ilium and continues onward towards the internal oblique and transversalis muscles, and perforates the aponeurosis of the external oblique above the internal abdominal ring, and is distributed to the integument covering the hypogastric region. The ilio-inguinal perforates the transversalis near the forepart of the crest of the ilium and communicates with the ilio-hypogastric between that muscle and the internal oblique. It distributes filaments to it and the spermatic cord, also gives out filaments to the integument over the external ring. The genito-crural sends off the crural branch, which passes through the internal ring, descending along the back part of the spermatic cord. In order to analgesize these nerves, we begin by compressing the skin firmly between the thumb and finger at a point one and one-half inches to the inner side, and a little below the level of the

anterior superior spine of the ilium marked "A" on the diagram, with a sharp needle, inject a small quantity of the solution into the skin; also inject in the same way a second point marked "B," where the cord passes over the pubis. The needle of a large syringe containing at least half an ounce of the solution is again introduced at point "A," carried down until the external oblique is reached, which is recognized by the resistance to the needle. The muscle is pierced and infiltrated in the direction of the ilium in the tract of the nerves, using about one-half ounce of the solution. The next step is to inject the surrounding superficial structures, to prevent pain during the introduction of the final sutures. This is accomplished by injecting the cellular tissues along the lines formed by A, C, B and D, and, last, a deep injection is made at point B. Up to the present time we have used an average of one



and one-half ounces for each case, but we are gradually lessening the dose as the technic is being worked out; this is two and one-half ounces less than some text-books recommend. Our aim is to do the operation with as little solution as possible; we use a one-half per cent solution, with three to five drops of adrenalin to the ounce, or prepare it from the Farbwerke-Hoechst tablets.

Our operative technic is the same as in all Bassini's operations, and I will not, therefore, detain you with a description of these, except to stress the fact that all herniotomies, as well as all other operations, should be done by clean knife dissection, and not with finger and gauze. The object of this is obvious. By knife dissection every small vessel will bleed at once and can be caught and ligated, the tissues are not traumatized, and by operating with instruments, and not fingers, the patient is much less liable to infection. Some operators will tell you it does not matter—it does not to the operator, it is true—but follow your cases clearly and

compile your statistics at the end of the year. This will not only convince you of the error of your ways, but will prove a boon to your patients as well.

Discussion on the Paper of Dr. Martin.

Dr. W. P. Bradburn, New Orleans, in opening the discussion on this paper demonstrated by diagrams on the blackboard the method of local anesthesia employed by Dr. Martin.

Dr. Lucien H. Landry, New Orleans: In operating on a case of hernia, or any other condition, under local anesthesia, we make a contract with the patient not to cause pain; we should always keep this contract in mind and religiously try to carry out our end of the contract.

In this respect I wish to lay stress on one little point of the technic, which seemingly does not amount to much, but, in my estimation, goes a long way in winning the confidence of the patient. In the beginning of the injection, when you infiltrate the line of the proposed incision, pinch up a portion of skin and infiltrate it, and when you reintroduce your needle always do so in an infiltrated or edematized area. In other words, keep your edema ahead of your needle, otherwise the patient will feel every introduction of the needle, when he should feel only the first, and is liable to become demoralized.

The method described by Dr. Martin, I am not familiar with. We have been in the habit of blocking off the ilio-inguinal and ilio-hypogastric nerves on a line between the anterior superior spine and the umbilicus. The genital branch of the genito-crural nerve, when seen, is found at the lower inner angle of the wound.

The technic described by Dr. Martin claims to reduce the amount of solution employed; this is very desirable, as there is no doubt that a highly edematous field predisposes the patient to a possible infection.

Dr. A. B. Nelson, Shreveport: I cannot refrain from speaking on this subject, because I heartily agree with the doctor in regard to this method of dealing with hernia. It is the same method I have used for the last four or five years, and it has been entirely satisfactory in my hands. I have done one strangulated hernia by this method. The patient did not care to take a general anesthetic, because he had been operated on a number of times before, and he knew what ether anesthesia meant. He had a good dose of morphia to begin with. He was sore, and there was slight pain when I began to manipulate the sac, but I succeeded with it by injecting the neck of the sac. The solution was prepared as Dr. Martin has described, namely: one-half of one per cent novocain, with five minims of adrenalin chlorid to 50 c. c. of the solution. I have seen no toxic effect from it at all. In using local anesthesia you are able to do a more beautiful operation than you can where you operate under general anesthesia, because hemorrhage is less, due to the adrenalin chlorid, and your field of operation is much clearer. You can outline it and do a better operation.

Another thing I would like to mention in connection with this is the character of the hemorrhage when you come to close the wound. If you are not careful, and if you do not ligate all the bleeding points, the most minute bleeding points, you are liable to have a bad hematoma.

The vessels dilate again and you are liable to have a hemorrhage which will cause trouble.

Again, as the doctor mentioned, traction upon the cord will cause pain in spite of all you can do.

Dr. P. B. Salatich, New Orleans: I agree with what Dr. Martin has said, and this is the exact technic I have tried to carry out whenever I do a herniotomy under local anesthesia. It is more satisfactory than any other operation under local anesthesia. I tried it first by undertaking local anesthesia from A to B, as indicated by the diagrams, but I did not get results, for the reason that, if you do not limit yourself as in an appendectomy, you pull the structures to the side and you have got the conjoined tendon to suture. By getting around the angle there you block off all this territory and you can pull on and dissect away without pain. A sharp dissection is necessary in doing a herniotomy. If you pull, you cause some distress or pain to the patient. By doing a sharp dissection, according to Crile, you produce very little pain.

Another point: You cannot say to these patients that the operation can be done without pain, because, occasionally, you may have a bit of adhesion in the sac, and the painful part of a herniotomy, as in an appendectomy, is the peritoneum. By injecting around the neck you can dissect around the omentum without pain and ligate the peritoneum without causing pain.

Dr. D. I. Hirsch, Monroe: I give my patients one-quarter of a grain of morphin about one hour before I attempt operation. Just a few moments before the patient is put on the table I give him another one-quarter grain, which does away with a great deal of pain in making traction on the cord, and especially in handling the sac. In two cases I have had considerable oozing following the use of adrenalin, and I believe it is better to reinject these cases in closing the skin, rather than use adrenalin. I do not transplant the cord.

Dr. A. C. King, New Orleans: What about the after-pain in these cases after the novocain has worn off?

Dr. Herman B. Gessner, New Orleans: If I understand correctly the technic used by Dr. Martin, it is practically that given in the translation of Bruns' work on anesthesia. There is another way which I think is preferable, namely: the method devised by Cushing and Bloodgood, who were the pioneer American surgeons in this line, in 1899. Dr. Cushing and Dr. Bloodgood infiltrate the skin and fascia over the hernia site and cut down to the aponeurosis and external ring; then they infiltrate the aponeurosis and split open the roof of the inguinal canal. Traction is made with two artery forceps, one above and one below, showing the ilio-inguinal nerve running over the border of the conjoined tendon. Sometimes, in cutting off both these branches, you can take one per cent novocain solution and inject each of these trunks separately with about ten minims. That, as a rule, gives complete and lasting anesthesia, and it does not give that extensive and sloppy edematization of the entire wound. The genital branch of the genito-crural nerve you can identify satisfactorily, and it does not seem to make much difference if you infiltrate down to the canal and get all the nerves blocked off with one per cent solution, and in the great majority of cases you can complete the operation without pain. In the minority of cases you have to infiltrate a little about the internal ring or about the sac in separating it from the cord.

I was glad to hear what Dr. Nelson had to say about local anesthesia in the strangulated hernia cases. It is desirable to use local anesthesia for the other cases, and is imperative for the strangulated cases. These cases, if given a general anesthesia, will drown in their own vomit. It is a dangerous thing to give a general anesthetic to a patient with a strangulated hernia.

There is just one thing I want to add. In this year 1917 there should be a way in doing a hernia operation or in completing it, if you do it on the right side, to go fishing for the appendix. In over half of the cases you can fish for the cecum and appendix through a right inguinal incision for hernia and take out the appendix. In the minority of cases it is too much traction; it is hard on the patient and you have to give it up.

Dr. Martin (closing): The most pleasing thing in connection with these cases is that if we use local anesthesia the patients have little or no pain; but my paper was on inguinal hernia. We have been all over this ground, and what Dr. Gessner has said is true. We have been trying hard and have succeeded in getting rid of the condition to which he referred, namely: the sloppy tissue. We used four ounces of the solution at first, then three, and now we use one and a half, and we believe we can bring about anesthesia with one-half ounce. We have no edematization of the tissues. In the last seventeen cases we have had no infection. The tissues have been beautifully clean. We have tried all methods, but this is the result of our work. Every man has a method that he carries out, and if he knows that method thoroughly he had better stick to it.

What I have tried to do in this paper is to bring a message to the timid man and to the general practitioner. We know there are many thousands of men wearing trusses to-day who are afraid to take a general anesthetic and be operated on, and there is no excuse for this fear to-day, when these operations can be done safely under local anesthesia.

SYPHILIS OF THE THYROID.*

By J. A. STORCK, M. Ph., M. D., New Orleans.

Dr. William Osler has well said: "Know syphilis in all its manifestations and relations and all other things clinical shall be added unto you."

With our present-day serologic tests it has become easily possible to detect syphilis in its masked forms, but, even during the pre-Wassermann period, it had been my opportunity to observe, clinically, undoubted cases of syphilis with thyroiditis. Under intensive mercurial treatment, in conjunction with iodides, these cases showed what appeared to be a cure of the syphilis, and a subsidence of the enlarged thyroid.

* Read by title at the 38th Annual Meeting of the Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

During this period I saw a well-marked case of Mongoloid idiocy. This six-year-old female was the only child of a woman forty-five years old, and her father was an acknowledged and easily recognizable syphilitic. The child showed the stigmata of familial lues. Under prolonged thyroid treatment, little improvement was manifest, but, on using mercury rubs and iodides, improvement was rapid.

I have recently seen two cases of thyroiditis in which the Wassermann was negative, but in which the gland returned to its normal size under mercury and iodides.

However, my paper is not founded on these cases; they are merely mentioned incidentally. Nor will I risk the possibility of tiring you by quoting *in extenso* from the literature of the subject under consideration. I will use only such references as I may see fit to assist me in confirming my own deductions. At the outset I desire to especially acknowledge my indebtedness to the works of James Berry,[1] B. S. Lund, F. R. C. S., and Dr. Hubert Richardson[2] for references, the original of which are not at my disposal.

One of the most widely quoted authorities on syphilis of the thyroid is Eengel Reimers. He states that swelling of the thyroid gland occurs in more than half the cases in their early stages. In these cases the swelling was always soft and painless and caused no trouble.

Wolfler records a case where the thyroid was found to contain a gumma the size of a fist. Lockwood[4] has drawn attention to the fact that slight and generally transient enlargement of the thyroid gland may be observed in the acute stages of syphilis, and James Berry[5] confirms these observations of Lockwood.

Abrahams reports three cases of women who developed exophthalmic goitre—the first five months after the primary lesion, the second during the height of secondary infection, and the third two years after infection, all of whom were cured by anti-syphilitic treatment. Dr. Moritz Furst,[6] of Hamburg, has published the case of a child who was born of syphilitic parents and who had at birth a goitre of considerable size.

Gummata of the thyroid gland have been described by Birch-Hirschfeld.[7] Demme[8] mentions three cases of congenital syphilis with gummatous nodules in the thyroid.

He has also observed symptoms of Basedow's disease to occur in syphilitics. Garnier studied the glands of five newly-born syphi-

litic children, and in only one case was the gland healthy. He says:

"The lesions were remarkable as being diametrically opposite to those found in the adult; the colloid substance, instead of being increased, was reduced or absent.

"The vesicles were uniformly full of cells, the capillaries dilated, and small hemorrhagic points were scattered through the gland, these being foci of cellular degeneration. These lesions are not confined to hereditary syphilis, but occur more or less marked in all cases of infection of the fetus."

These lesions are of importance, as they may account for many of the troubles occurring in the development of the gland. Lockwood[10] remarks:

"The enlargement of the thyroid in this early stage of syphilis is comparable to the slight enlargement which is met with in early stages of measles and other acute specific diseases."

Lockwood further states "that, after he had learnt to look out for this thyroid enlargement, it was frequently noticed among his venereal cases."

I now come to a consideration of the cases on which my paper is founded. The cases which I desire to report are three in number.

Case 1. White male, æt. 46, a cotton factor, weight 135 pounds, consulted me in February, 1913, for pain in "the liver." History of chancre fifteen years previous to consulting me. The patient showed clinical evidence of syphilis. He had taken some mercury and iodid before consulting me. The Wassermann was positive. The thyroid gland showed no enlargement, nor was there any exophthalmos.

On February 12, 1913, six decigrams of salvarsan were given; seven days later the same amount was repeated. Two days after the second dose of salvarsan was administered a painless enlargement of the thyroid was noticeable, and on the fourth day the pulse, which previously had been 78, was now 94. The eyes were somewhat bulged; no tremor was visible. The patient presented a fairly good clinical picture of exophthalmic goitre. Mercury rubs daily and potassium iodid in ascending doses were begun on the eighth day after the second dose of salvarsan, and were continued for twenty days. By this time the thyroid gland subsided in its swelling, the eyes had resumed their normal state, and the pulse was down to 82. The urine, which on a previous examination had been normal, now showed a few finely granular casts, which is not uncommon during mercury administration.

A third dose of six decigrams of salvarsan was now given, and ten days later the Wassermann was negative. On my advice this patient has since used mercury rubs and potassium iodid.

A case recorded by Dr. Werman,[11] of Dresden, is of specific interest, as it is somewhat similar to the one just reported.

Case II. Male child, æt. 12, weight 65 pounds, was born of apparently

healthy parents, who denied syphilis. The Wassermann in the mother's instance was positive; in the instance of the father, negative. The child was brought to me for treatment of "loose bowels." Thyroid gland was much enlarged and somewhat soft and painless. He gave evidence of congenital syphilis—i. e., Hutchinson's teeth, etc., and had been treated for keratitis. No Wassermann was made in the beginning, but the child gave a frank Luetin reaction. The loose bowels were checked with coto bark. After eighty days' intensive treatment with mercury and iodid the thyroid gland had assumed its normal size. Wassermann and Luetin tests negative; the patient was generally improved. No salvarsan was administered in this case.

Case III. Unmarried white female, æt. 20, weight 96 pounds. Both parents had died young; one brother, apparently healthy.

The case showed an enlarged soft and painless thyroid (thyroiditis); no exophthalmos; pulse 73; no tremor, blood, hemoglobin 80, whites 8,000, reds 4,300,000. The patient had headaches and twitchings, was irritable and prematurely old. Wassermann negative; Luetin positive. Four decigrams of salvarsan were given, and repeated in seven days. This was all the arsenic this patient received, for an obvious reason. Thirty rubs with mercurial ointment were used, also potassium iodid in increasing doses until one hundred grains were taken three times daily. After an interval of fifteen days a second series of mercury rubs were given. Following this treatment the thyroid gland assumed its normal size.

In conclusion, I may summarize as follows:

1. That the thyroid is not infrequently involved in both early and late syphilis.

2. That, in my own experience, thyroiditis is the most common condition met with in syphilis, but, from the observation of others, gumma and other conditions occur.

3. That, while the thyroid is at times involved in the adult syphilitic, it is sometimes found in the young, but most often of all in infants.

4. That the thyroiditis occurring in syphilitics is favorably influenced by intensive anti-syphilitic treatment.

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THE IMPORTANCE OF REST UPON THE AFTER-RESULTS OF PELVIC INFECTIONS.*

By W. B. CHAMBERLIN, M. D., Baton Rouge, La.

In presenting this brief paper on a subject so common to all it is not my intention to go into a detailed account of the different infections of the pelvis, to present statistics, or offer references, but to bring to our attention in a rough way the changes that have taken place in the last few years in treating infections of the pelvic organs, and the results from this treatment.

Pelvic infection means injury, either slight or serious, to the pelvic organs. This condition, sooner or later, often leads to surgical interference. What to do and when to do it to secure the best results, both immediate and future, is the question.

Looking back ten or fifteen years, it is remarkable to note the entire change that has taken place in two surgical diseases or conditions—appendicitis and salpingitis—with their treatment.

The appendix, although known to be of no use, was considered a dangerous organ to interfere with, and every effort to cool down an attack would be made, with the result that general peritonitis, abscesses, fistulæ, obstruction and other complications were not a rare result. To-day how different—the quicker the better to have it out. People are educated to this fact, that delay is dangerous.

At the same time the effort to conserve the appendix and a field for further trouble was being made, how about that useful part of woman's anatomy known as the Fallopian tube? This tube, being of value both to woman and surgeon, it could not afford to wait to cool off, but was taken out at once. What results did we see? A higher rate of mortality and a better one of office visitors, months and years after, presenting all manner of abdominal and nervous symptoms and menstrual disorders. We all know this class too well.

That class of pus cases upon which vaginal drainage could be employed often did remarkably well, a certain percentage remaining cured and requiring no further interference.

Other cases, operated during the cold stage, did well, at the time of operation and following. These were probably those fortunate to be ill enough to be forced to stay at home and let nature rest them up and cool them off.

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How many cases we see now with traces of old pelvic lesions, with the history of typhoid, malaria or continued fever following childbirth or a miscarriage. Needless to say we see also lesions from other causes. These cases give previous histories of pelvic trouble, sometimes of many years' standing, commencing with a lengthy period of temperature, followed by intervals of slight fever, then a disappearance of the symptoms, but feeling badly and unable to attend to their usual duties.

How diffrent a picture this pelvis, or one properly treated and rested, presents to one during an acute or sub-acute attack, and how different, should there be no fatal result, the after-result will be.

The one will show, perhaps, adhesions in plenty, cysts and all else that goes with such a case, but these adhesions will be organized and dry, can be cut away and all raw surfaces covered up by peritoneum, leaving a smooth dry surface.

The other case, on the other hand, no dryness, but afterwards showing a moist and sticky pit, a nest for the future formation of adhesions for the patient, with a further prospect of more surgery.

People are not yet educated to the fact that all pelvic infections and diseases require proper rest. When they are willing to be guided entirely by the physician as to the period of rest at home, then will there be better results and less cases in the rest-wards in hospitals.

SOME FACTS ABOUT THE REPAIR AND TREATMENT OF FRACTURES.*

By ISIDORE COHN, M. D., New Orleans, La.

The questions involved in the title of this paper are as old as the practice of medicine, and yet to-day they are of more interest than they have ever been. No branch of surgery has so completely marked time until recent years as the subject of fractures. The repair of fractures has been of particular interest during the last few years, especially since MacEwen's epoch-making book, "The Growth of Bone," appeared in 1911. Since that time the controversy has been waged with great enthusiasm by experimenters and

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clinicians. On previous occasions I have stated the views which I have formed as a result of three years' experimental work. No apology is necessary for repeating in part these views, because, as we look over the more recent American publications, we find that the question of repair is but lightly touched upon, and even then the old, artistic and rather picturesque ideas are given a dignified position, as though they were proven facts. It is a great relief to turn to some recent publications of English origin to find a rather extensive discussion of callus formation based on modern experimental data. It is rather hard for us to entirely forget the teachings of the past, and yet, apparently, we must.

Based on the old ideas of Ollier, the periosteum has been given the credit for much of the repair which takes place after a fracture. This would be eliminated if we would accept the proven facts that the periosteum is a fibro-elastic membrane which protects bone, gives an additional nutritional supply and acts as a natural splint after fracture. The periosteum does not contain osteoblasts; they lie on the surface of the bone and are easily activated by injury.

In the experimental work which was done in collaboration with Dr. Gustave Mann, we found that bony defects were repaired as well in the absence of periosteum as when it was retained.

A detailed discussion on callus formation cannot be undertaken at this time, but one may refer to a paper which I published in *Surgery, Gynecology and Obstetrics* on repair of fracture. An extensive discussion of this subject can be found in Grove's recently published work.

Before taking up the treatment of fractures we should first make a definite diagnosis. There are several obstacles to a correct diagnosis. The most important of these is the acceptance by the doctor of a patient's diagnosis of a sprain. Such a state of affairs should cease. Moreover, after examining the patient, one should hesitate to make a diagnosis of sprain until a fracture has been eliminated by all possible means. In order to do this we should cease to consider fractures as minor surgery, but rather as an important branch of surgery, the proper knowledge and application of which will redound more to the credit of the surgeon and comfort of the patient than in any other type of injury. A clearer conception of the importance of fractures is being thrust upon the medical profession by the public, through the agency of the Workmen's Compensation Act. The questions are being continually

asked, "How long will the patient be unable to return to work?" "How much will his earning capacity be permanently diminished as a result of the injury?"

Incidentally, these questions are being constantly answered erroneously, because no statistics are available in this country. The American Surgical Association is now trying to obtain statistics, such as have been obtained in some foreign countries, notably England and Australia.

The diagnosis of a fracture involves careful attention to detail; particular attention should be directed to obtaining exact information regarding the accident, the location of the pain, the measurements, limitations of motion generally spoken of under the heading of loss of function, and X-ray findings.

A word here about the interpretation of X-ray findings may not be out of place. We should not mistake epiphyseal lines for fractures, and, further, we must not depend on a radiogram taken in *one* plane. Such a picture would often mislead us, because an apparently good apposition in one plane may show overriding, lateral or rotary displacement in another plane. From personal observation I feel sure that there is certain diagnostic evidence, the importance of which is often overlooked, such as persistent localized pain and loss of certain motions, to say nothing of our failure to use a tape-measure.

Persistent localized pain is one of the best evidences of fracture which we have. The loss of certain motions about a joint following an injury is often diagnostic in itself, if we would take the trouble to remember the location of muscle attachment. I might remind you that such measurements as are based on the relationship of certain anatomic landmarks are of more than academic value.

Having determined on the evidence of a fracture, certain procedures, it seems to me, are imperative, if we would obtain good results, anatomic and functional, namely:

I. Anesthesia. II. Immediate reduction. III. Immobilization. IV. After-care.

Separate discussions of each of these is necessary. Fractures must no longer be considered work to be done by the untrained man. Fractures must not be considered a "one-man's job." To apply two padded boards to the forearm, without attempting to

reduce a deformity, is worse than useless, and to attempt reduction without anesthesia is not humane nor is it good surgery. It is not humane, because manipulation of a fractured extremity causes pain, and pain causes further muscle contraction, thereby increasing the amount of force which would be necessary to break up an impaction and reduce a deformity. An anesthetic removes the psychic element and it relaxes the muscles, thereby making reduction a relatively easy matter. This last statement needs some amplification.

Attempts at reduction which are not along anatomic lines are not going to reduce the deformity, and, as a result of their inability to reduce the deformity, some men hurry to accept the dictum of Mr. Lane. Such a procedure is dangerous. *If one will individualize fractures, making traction in a direction calculated to oppose the muscles producing the deformity, he will be gratified with a non-operative plan of treatment in most fractures.*

Reduction under anesthesia should be resorted to at the earliest possible time after the fracture, if one wishes to obtain an accurate approximation of the fragments. The idea of waiting for the swelling to subside before reduction is attempted should be relegated to the historic past, for the reason that, immediately after the accidents, the callus-forming elements are most active, and because muscle contractions, which in the beginning are merely spasmodic, later amount to real contractures, which require greater force to overcome. Moreover, the ends *of the bone may become covered by a new connective tissue membrane, which in itself may produce delayed union.*

Another fallacious idea in regard to reduction, it would seem, should be disregarded; it is in regard to aged individuals who have fractures. Those who have extensive experience with fractures have seen patients 75 years old and over recover perfect function after proper treatment. No one should be condemned to living invalidism because of his age. Few more progressive steps in this direction have been made than that of Royal Whitman when he advised abduction treatment of fractures of the femur in the aged.

Having reduced the deformity, it becomes necessary to consider the method of treatment best adapted to the particular case. The fact that there are several systems of fracture-treatment in use to-day is evidence that the oldest methods have not given satisfaction. I need not dwell on this point, as all of us have witnessed

an aged woman with a fractured femur put to bed with sand-bags, a Liston splint or some other equally ineffective method of treatment; all of us have seen the unsightly deformity of the elbow following a fracture above the condyles treated by a straight splint or cast; all have seen the broad ankle, the painful flat foot and diminished earning capacity of the individual who has had a Pott's fracture treated by a straight plaster cast, the foot at right angles to the body; all have seen the deformity following a fracture of the shaft of the humerus treated by the old internal and external right-angle splint. No one can forget the case of Volkmann's ischemia, the ankylosis of joints, the atrophy of muscles and consequent helplessness of the individual who has had a fracture which has been immobilized for a period of weeks, during which time the dressing has not been removed, the part, consequently, has not been inspected.

Nothing is worse than prolonged immobilization. As an outgrowth of the dissatisfaction over the results obtained from the "prehistoric" prolonged mobilization came Championniere's method of mobilization and massage. This method has not received its proper share of attention at the hands of the general profession because of a lack of appreciation of the details of the method and a misunderstanding of the originator's conception of the word massage. Many of the most ardent enthusiasts failed, even after a prolonged study of Championniere's methods, to obtain good results by mobilization and massage.

In this, as in other so-called systems, attention to details is essential. Mobilization does not mean dispensing with splints, nor does massage mean the rough handling of muscles which the average masseur is inclined to use when you refer a case to him for after-care.

Mennel, a follower of Championniere in England, found that his results were exceedingly good during the first few weeks, but later limitation of motion developed. Not understanding the reason of his failure, he wrote to Prof. Championniere, who replied that the patients had been given an overdose of mobilization and massage. There are certain facts which must be understood:

1. Prolonged immobilization means atrophy and contraction. (Groves.)

2. It is our first duty to secure accurate anatomical form, and our second to maintain *proper* healthy muscular nutrition and exercise. (Groves.)

3. Excessive motion following fracture, particularly in the neighborhood of a joint, favors an excessive callus formation, which will lead to an ankylosis, bony in character; therefore an attempt to improperly apply this method with a view of favoring nutrition of muscles, thus preventing contractures, will result in bony ankylosis. How can this difficulty be overcome? By a careful appreciation of the ideas of the originator. By massage, Championniere means a light, stroking, rhythmic motion, always in one direction, and that from the distal to the proximal end. This has been compared by Mennel to the gentleness of a caress. The mobilization which he speaks of is not a forced one; not one which causes pain; not a repeated motion, but a single painless motion. It must be understood *that any motion of an injured joint which causes pain is injurious.* No more illuminating discussion of this subject has appeared than that by Robert Jones ("Injuries to Joints").

No single method of treatment of fractures is universally applicable. A knowledge of each is necessary, and a combination of the good points in each is essential at times, in order to obtain good results. Many adherents to the old method of prolonged immobilization who had been disappointed in their results turned their ear readily to Mr. Lane's operative suggestions. The time is too short to discuss this subject fully, but there is time to say a few words. For success in routine operative work in fractures, one must be especially qualified, both by environment and technical skill. Sepsis is fatal to success in operative work in fractures, whether it be after the use of foreign material or auto-transplants. If this last statement is true—and it is—then, operating on recent compound fractures is bad practice. This has been the experience of English and French army surgeons, so far as I have been able to read. Drainage in compound fractures, particularly gunshot wounds, is the most important early treatment. Because of this fact, the various applications of the extension methods of Bardenhauer have become popular during the present war. It has been necessary to make use of some form of immobilization which would permit of frequent changes of dressings and irrigation, such not being possible with plaster casts, and certainly not in operative cases. The extension treatment is misunderstood, and often times abused, because of our failure to remember certain facts. The commonest application in general use is the Buck extension. This

fails often because of the use by the surgeon of insufficient weight, and because of friction (the surgeon allowing the leg and thigh to remain on the soft bed). Groves well defines the basic principle of the extension method in the statement, "The principle of the method is that of the establishment of an equilibrium of forces." For this reason considerable extending force must be used. One may confidently look to the day when the Jones modification of the Thomas splint, the Hodgen splint, the Groves splint and the splint of the type of the æroplane splint will be in more general use.

SUMMARY.

1. The old conception of callus formation should be discarded.

2. A more exact knowledge of muscle attachment and action should be possessed by the fracture surgeon.

3. Prolonged immobilization should be discarded.

4. Frequent inspection of the part, contrast baths and the proper use of massage should be substituted for prolonged immobilization.

5. Board splints should be discarded for plaster splints wherever possible.

6. Extension methods should be given careful consideration, particularly the more recent developments of the method.

7. Operative treatment is a special field for special cases, and to be used only in the most thoroughly equipped institutions.

GASTRIC CRISES OF TABES.*

By A. L. LEVIN, M. D., New Orleans, La.

The object of this paper is not to outline a broader view of the subject under consideration, but to call the attention of the medical profession to certain phenomena of gastric disturbances, such as epigastric pain and vomiting, the underlying true cause of which gastric crises is very often overlooked, in spite of the fact that, of the various kinds of crises in tabes, the gastric are the most common. While touching the point of diagnostic errors, I dare to remark that there is a crying need for greater accuracy in gastric diagnosis, a much-neglected branch of our medical schools. F.

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Epplen (*Northwest Med.*, July, 1914) deplores the existing state of affairs and advises physicians to get away from text-book teachings, to avoid the uncertain diagnosis of dyspepsia and to apply with caution the ordinary means of gastric diagnosis. It is indeed tempting to diagnose peptic ulcer when severe epigastric pain and vomiting are the outstanding features in a given case. Of one thousand cases of tabes dorsalis in the Cook County Hospital, carefully studied by John W. Nuzum (*Jour. Am. Med. Assn.*, February 12, 1916) 8.7 per cent have been subjected to laparotomy under mistaken diagnosis, one or more times. Gastric ulcer was the diagnosis most frequently made, with gall-bladder disease next, and appendicitis a close third. It is interesting to note further in that report regarding operations for post-operative adhesions. There were seven on five patients. One patient had five laparotomies, the last three for post-operative adhesions, and following each operation the old symptoms of epigastric pain, with severe vomiting, returned—that is, gastric crises of tabes. I also wish to call your attention to the purely motor gastric crises, where recurring vomiting spells, without pain, constitute the most important item in the history of given cases. Such cases are often mistaken for acute indigestion and the diet is made the scapegoat, or a diagnosis of nervous vomiting may be entertained. Mistaken diagnoses occur chiefly through failure to examine the nervous system. This point I wish to emphasize strongly. The subject will be made clearer, the differential diagnosis easier and appropriate treatment will be better applied if a brief review of the subject is tolerated.

Gastric crises, one of the many phenomena of tabes, has no pathology of its own, but is produced by the pathological condition of the spinal cord. What factor causes the degeneration was a matter of dispute until the Wassermann test came to the rescue and spirochætæ found in the spinal cord. Duchenne alluded to the frequency of syphilis. Leyden pointed to chill as the cause. Wunderlich laid stress on overexertion, fatigue, sexual excess and probably concussion of the spine. Erb was the man who laid the strongest emphasis on syphilis as the real factor in tabes. This view was strongly supported by the famous French syphilologist, Fournier. Möbius expressed his conviction in the following words: "Without syphilis there is no tabes." The latest statistical studies seem to confirm the guilt of syphilis is tabes. Noguchi found the spirochætæ in the cord in one case out of twelve.

According to McCallum, the lower sensory neurons of the posterior columns in the cord are affected. The lipoid myeline sheaths and the axis-cylinders of the nerve fibers disappear and are replaced by an overgrowth of neuroglia. F. R. Starkey is of the opinion that the many mysterious phenomena of tabes which could not be accounted for solely by degeneration of the posterior columns of the cord are probably due to the involvement of the sympathetic nervous system and glands of internal secretions. According to Nagotte, there is a meningitic process about the posterior roots, close to their point of entrance into the spinal cord. This idea of a meningitis is very well borne out by the findings in the spinal fluid, namely: increased cell and globulin content. The root fibers are involved in the chronic inflammatory process, and secondary degeneration is the result. Through these degenerated tracts probably pass fibers of sensation, touch and reflex function. The sensory fibers of pain may be pinched at the point where they enter the cord. It is then evident that the gastric pain in gastric crisis is not necessarily due to an organic lesion in the stomach, but to a distant factor, and the vomiting is due to a central nervous disturbance.

Gastric crises of tabes is quite common, and usually not diagnosed. When a history is obtained of severe epigastric pain waking up the victim in the hours of the night, after a period of apparent well-being, and he cannot blame the diet as a cause of the trouble, shortly to be followed by nausea and vomiting, at first food, if it happens to be shortly after supper, later on clear fluid or mixed with bile. The agony lasts a few hours and then wears itself out and the patient falls asleep. This may be repeated the following day, or only a sensation of nausea may be experienced, at times fairly well in the daytime, to be reawakened the following night or nights, until the fire is out by itself or extinguished by a little medication. A period of rest may then ensue for weeks or months, when the spinal storm breaks out again. According to the duration of the disease, the storm may be mild or severe in character. Such victims usually wander from one office or clinic to the other in search of relief. As a rule, there is no history of vomiting blood unless the vomiting is severe and prolonged; loss in weight, in spite of the severe repeated punishment, is not an important item in their histories. The history is usually of long duration—many months or years. Stomach contents analysis may

be high, normal, low or achylia; occult blood negative, urine may be normal, blood for Wassermann positive or repeatedly negative, physical examination of heart, lungs, liver, spleen and abdomen negative, but the examination of the nervous system and spinal fluid are very important. If you find a positive Romberg sign, absent knee-jerks, Argyll-Robertson pupil or sluggish reaction to light and an increased cell and globulin content in the spinal fluid, even with a negative blood for Wassermann, the diagnosis is sealed. I may go a little further: With a history as described and loss of knee-jerks, Argyll-Robertson pupil, you are fully justified in strongly suspecting gastric crises of tabes.

Prognosis: In the early stage of the disease the progress may be stopped by the proper modern treatment. After it has well developed, a cure is impossible; the patient may be made comfortable and his condition somewhat improved. The duration of the disease may cover a period of many years, and death is rarely due to "crises."

Treatment: During an attack, usual measures to quiet the storm of the nervous system must be resorted to; after it is over, the only treatment that will benefit the patient is a persistent anti-luetic, by intravenous, intraspinal, or both, administration of salvarsan or neosalvarsan and mercury and iodid in addition. The mode of administration varies greatly, in the experience of many writers. In my case, which I will describe, I used salvarsan intravenously and mercury and iodid. The intraspinal medication is not suitable for clinical cases. The following cases came under my observation in my gastro-intestinal service:

Case 1. J. K. (April 10, 1917), male, white, 47, candy-maker. Gives history that in 1911 had a fall. Since then sharp shooting pains in various parts of body, worse at night. Last year epigastric pain and vomiting often; vomits large quantities of fluid, no blood. No loss in weight; appetite good; bowels costive. Primary lesion in 1901. Physical examination negative, except for loss of tendon reflexes; a positive Romberg; gastric analysis, urine and stool negative. Spinal fluid positive. Blood examined at Charity Hospital, Presbyterian and Touro, with negative results. Three full doses of salvarsan intravenously, supplemented by mercury and iodid. Very marked improvement. All symptoms under perfect control, so far.

Case 2. C. H., white laborer. Very severe abdominal pains in the morning for the last eight or nine months; no relation to food. Profuse vomiting. Sensation of a band constricting around waist line. Profuse perspiration as soon as he goes to sleep; general málaise; some loss in weight, and extremely nervous. Nauseated often. No alcohol; heavy smoker. Negative venereal history. He also complained that very often

he feels like he is going to lose his right mind; suffers from lightning pains and has a peculiar sensation in rectum. Heart and lungs negative; abdomen nothing of special interest; liver and spleen not palpable; eyes, right, oval in shape and larger than left, do not react to light; Romberg sign present; tendon reflexes lost. Gastric analysis: Quantity, 75 c. c.; HCL, 74; total acidity, 110; chym., good; mucus, normal; urine, negative, except for indican, two plus. X-ray: Considerable irritability of stomach. Wassermann test: Tch. and orig., strongly positive. Spinal fluid: Increased cell and globulin count. Anti-luetic treatment instituted; three full doses of salvarsan intravenously and mercury and iodid in addition. Patient is greatly improved; most of the symptoms are under control, although his Wassermann, on April 25, 1917, was still three plus positive. This is a far-advanced case. It is advisable to give him more salvarsan.

Case 3. H. F., colored, 47, bartender. Came under my observation in August, 1913. History of attacks of vomiting at night, preceded by burning sensation in epigastrium and pain in upper abdomen. Attack may last a few days or at times a couple of weeks, to be followed by a period of perfect rest for several months, then the story repeats itself. During a spell he is nauseated most of the time; insignificant loss in weight. Bowels irregular. History of primary infection twenty years ago. His examination is practically negative, except for a positive Romberg; sluggish pupils and loss of knee reflexes. Gastric analysis: Low acidity. Urine negative. Wassermann negative. He is doing remarkably well under anti-luetic treatment.

Case 4. W. E. (November 10, 1916), white, 29, wine-cellar work. For many years stomach trouble. Pain in epigastrium, lancinating in character. He is suddenly awakened at night, about 2 or 3 a. m., with severe epigastric pain, nausea, and followed by vomiting food, water and mucus; he experiences also a burning sensation in epigastrium. Lost forty pounds in a year and a half. Primary lesion ten years ago. Wassermann twice negative. Occult blood negative. Physical examination negative. Gastric analysis: Quantity, 95 c. c.; HCL, 52; chym. and mucus, normal. X-ray: Probably luetic stomach, spasm of pylorus and contractions through entire stomach; marked retention. Examination of nervous system: Sluggish reaction of pupils to light, loss of tendon reflexes, Romberg present and spinal fluid positive. Diagnosis confirmed by neurological clinic. This patient refused salvarsan. He received heroic doses of iodid and mercury. As soon as he is relieved he disappears, to return when storm recurs. Have not seen him since January, 1917.

In conclusion I wish to admit that if several years ago a reminder of this sort would have come across my path I would have been able to report to-night many more cases of "gastric crises of tabes."

FIRST CASE OF LEISHMANIOSIS CUTANEA IN VENEZUELA.*

By JUAN ITURBE, M. D., Caracas, Venezuela.

Credit must be accorded to Lindenberg[1] of having identified the *Bauru ulcer* of the State of Sao-Paolo, Brazil, with the Biskra button. In substance, the cause of those tegumentary ulcerations is a protozoon of circular or oval shape, of two to four microns in length and one to two in width, classified by Vianna[2] under the denomination of *L. brazilensis*, the specific agent of the leishmaniosis cutanea, a disease known in some parts of Venezuela by the vulgar name of festering wound. The *L. Brazilensis* in preparations colored with Giemsa's stain present an oval-shaped nucleus of violet tint situated near the anterior extremity; its protoplasm is but slightly affected by the coloring matter and is somewhat blueish.

The kinetonucleus or blepharoblast is located exactly in the line of the lesser diameter of the protozoon. The fundamental character of the leishmania is the presence in the interior of the protoplasm of a stained band of pale red, situated perpendicularly to the kinetonucleus and which is called *rizoplasto.*

The disease has been described in other States of Brazil by Carini,[3] Pirajá da Silva[4] and Matta;[5] in Surinam by Flu;[6] in Perú by Escomel[7] and Gastiaburú;[8] in Paraguay by Migone;[9] in Bolivia by Sagarnaga;[10] in Panamá by Darling,[11] and in French Guiana by Nattan-Larrier and Heckenrath[12].

The patient, subject of the present discussion, as well as the related microscopic preparations, were submitted to the National Academy of Medicine and studied in our laboratory by Drs. Gorgas, Guiteras and Carter, members of the Yellow Fever Commission of the Rockefeller Institute, who confirmed our diagnosis.

X. X. arrived at our clinic from San Fernando de Apure, where he resides and is engaged in the cattle industry. He is a peasant cattleman of our friend C. E.

He states that two years previously he suffered in both legs various pruriginous acne, hard, violet-colored, resisting all medication. These tumors increased in extent until they ulcerated. Some of them healed spontaneously, while others remained in the same state; the ulceration was characterized by hard edges, a cover of black crust, and bad odor. In the month of August of last year he decided to consult us, having

*Paper read at the Second Venezuelan Congress of Medicine, assembled at Maracaibo, 1917.

had no improvement from any of the treatments to which he had been submitted.

As may be seen in the photoplate which accompanies this note, the lesions of the skin are localized in both legs. In the right forearm and the knee of the same side movable nodules may be readily observed situated in the subdermic region. During the course of his illness, X. X. does not remember to have suffered from fever.

The examination of the blood gave the following result:

Red corpuscles	4,800,000
White corpuscles	10,000
Hemoglobin	73,000

Leucocital formula:

Polynuclear eosinophiles	11 %
Polynuclear basophiles	33.5%
Mononuclear	2.9%
Large lymphocytes	18 %
Small lymphocytes	32 %
Transitional forms	2 %

The Wassermann reaction was — — —. The preparations affected with serosity and the blood of the lesion, previously scraped, colored with Giemsa's stain, showed the presence of a great quantity of **L. brazilensis.**

This case was submitted to the emetic treatment, following the methods of Vianna,[13] Carini[14] and Utra Silva.[15] One month after treatment the cure was definite.

We employed the emetic of Bais Bros. in an aqueous solution of one per cent. Sterilization is done by filtering cold through a Berkefeld filter. Every two days there will be intravenous injections of 5 c. c. of the solution referred to until cure is complete. Care should be taken to inject the liquid as slowly as possible, in order to avoid the fits of coughing and muscular pains which are apt to result when the emetic solution is introduced rapidly into the vein.

Lindenberg[16] has employed also in this disease erixidine (oleaginous emulsion of trioxide of antimony), a substance recommended by Kolle[17] for the treatment of trypanosomiasis. This has given excellent results.

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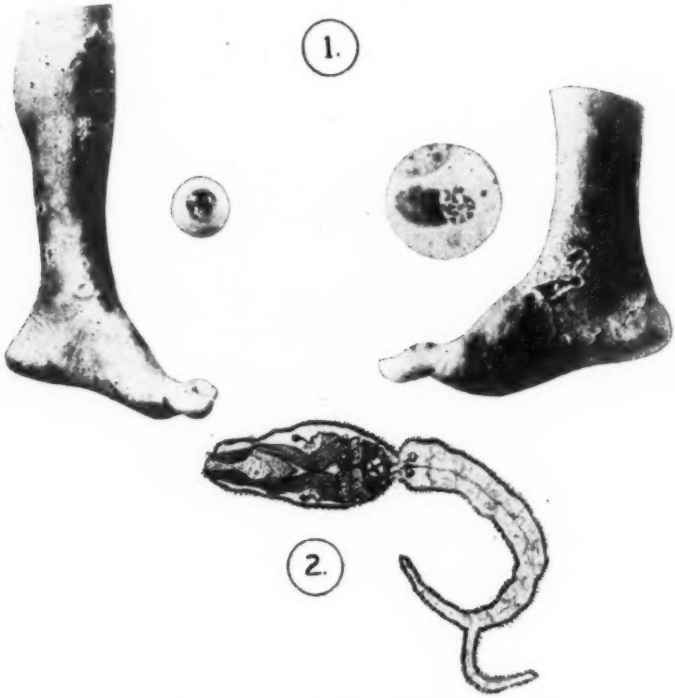

1. First case of Leishmaniosis cutánea in Venezuela.
2. Adult cercaria of **Schistosomum mansoni.**

THE ANATOMY OF THE CERCARIA OF THE SCHISTOSOMUM MANSONI.*

By JUAN ITURBE, M. D., Caracas, Venezuela.

The organism of the adult cercaria of the *Schistosomum mansoni* presents some difficulties on examination, for the following reasons: The rapid movements of the tail, the transparency of the body and its slight sensibility for colored matter.

By the following simple procedure I obtained some excellent specimens: A drop of material, extracted for examination, was placed in a perfectly clean and portable object; this was then placed in a chamber for a period of two hours, until all the essential parts of the cercaria were colored with the suspended material contained in the drop of material. In case these particles do not uniformly combine, thus making it impossible to define the details, then it is expedient to illuminate the visual field either with lactophenol or potassium acetate.

As I have recently demonstrated at a meeting of the Academy of Medicine,[1] fifty or sixty days after the miracidium has penetrated the body of the specimen host the cercaria presents the following characteristics: a strong tail, bifurcated throughout its distal third; the oral sucker is larger than the acetabulum; the body is covered with minute thorns and filled up with three pairs of glands of a mono-cell formation. The germinal cells occupy a space between the ventral orifice and the head of the tail. The glandular cells are at first round—*i. e.,* when the cercaria has not as yet attained the adult stage, but when fully developed the cells become more oblong and on both sides connect with the extremity of the body. Very often they develop the acetabulum altogether; generally the last part covers the anterior region of the ventral orifice. The glandular ducts are found along the external border of the secretive system and extend to the anterior part of the body of the cercaria near the oral orifice. Each meatus is limited with four thorns, which are only visible when strongly magnified.

The cercaria does not show any vestige of possessing an alimentary tube, but at the bottom of the oral sucker a cavity may be observed, ending as a blind sack, which, as long as the animal has not as yet attained the adult stage, is filled with a granular and refracting substance. With the adult cercaria this matter is more homogeneous.

* Academy of Medicine, Ordinary Session No. 424.

The excretory system is characterized by five pair of flame cells, situated between the germinal epithelium and the head of the tail. The head of the cercaria is encircled by from six to ten points, which are for the purpose of the traverse skin penetration of the animal host. The measurements are as follows:

Body:

Length	0,100 m. m. to 1,130 m. m.
Breadth	0,040 m. m. to 0,050 m. m.

Tail:

Length.	0,140 m. m. to 0,150 m. m.
Breadth	0,020 m. m. to 0,025 m. m.

Bifurcating rami:

Length	0,040 m. m. to 0.050 m. m.

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INFLUENZA.*

By A. J. REYNOLDS, M. D., Fort Necessity, La.

In an article on the "Bacteriology of Epidemic Grip" C. H. Nammack, of Bellevue Hospital, New York, deals with findings obtained by making cultures of the nasal secretion and sputum of patients during the epidemic in New York in the winter of 1915-16. The following note concerning the three main factors on which this epidemic depended is well worth repeating:

"First, the tremendous variation in climatic conditions which has occurred in the past two months; second, the crowding together of great masses of people in badly-ventilated cars, subways and moving-picture and other halls; and, third, the contamination of the air, which we have been obliged to breathe, by the coughing, sneezing and spitting of those already suffering from some form of respiratory infection, usually of the common-cold type. The abrupt transitions which occur in going from crowded, over-heated indoors to the chill outside air result in an alternating hyperemia and congestion of the mucous membranes of the respiratory passages, with a subsequent constriction of the blood vessels, which produces a condition of affairs that is very favorable for the reception and subsequent vigorous growth of the infecting organisms, and which may result in the development of the characteristic clinical picture and symptoms of grip."

A careful description of the methods of obtaining material, cultural methods and experiments is given. The number of cases

* Read before the Franklin Parish Medical Society, May 15, 1917.

studied in the epidemic were about fifty, and, from nineteen, influenza-like bacilli were isolated, but sometimes in so small number as to be considered not of etiologic importance. The influenza bacillus was found alone in six cases and associated with other organisms in thirteen cases. The pneumococcus was isolated from eighteen cases. Other organisms found were the hemolytic streptococcus in six, Friedlander's bacillus in three, staphylococcus in three, and micrococcus catarrhalis in only one.

Special attention is directed to the fact that, even after the severe symptoms have subsided, the patient who has suffered from an attack of influenza may remain a source of danger to the community, not so serious, perhaps, as a typhoid carrier, but none the less requiring such local treatment as will result in the destruction of the residual infection. Instances are cited to illustrate the importance of this precaution.

C. P. Showalter, writing on the cause and treatment of influenza, says clinical cases of the disease commonly called la grippe are frequently due to organisms other than the Pfeiffer bacillus, and he incriminates the pneumococcus and streptococci. In many cases the infection with the Pfeiffer bacillus is secondary to infection with one or both of the other (*West Virginia Med. Jour.*, March, 1916).

He believes that influenza should be given more serious attention by the medical profession, especially the complications. Vaccin therapy, he thinks, should not be used indiscriminately, but reserved for properly selected cases, such as middle-ear complications and infections of the nasal accessory sinuses. He emphasizes the importance of fresh air, plenty of water and very light diet. The drug treatment, he states, is largely symptomatic. He gives aspirin, the salicylates, and sometimes the coal tar preparations, such as acetanalid, antipyrin and phenacetin; he warns that the last-mentioned drugs must be given carefully, on account of their depressing influence on the cardiac apparatus.

To any one who has taken care of many cases of influenza, says Dr. B. R. Robinson (*New York Med. Jour.*, February 12, 1916), anything in the way of an efficient and harmless remedy should be welcomed gratefully. In the following prescription he believes such a remedy exists:

Ammonii salicylatis .....gr. 3
Caffeinæ.....gr. ¼
Put up in one capsule.

Two of these capsules taken by an adult every two hours for four or five doses, and then every three or four hours.

A mouth wash or gargle of liquor alkalinus antisepticus well diluted with water may be used three or four times in twenty-four hours.

Robinson says:

"It is really remarkable the beneficial effects often produced by taking these capsules. I cannot commend their use too strongly. I am convinced that up to date they are the most useful remedy I have tried in the treatment of grippe. Hitherto, in epidemics of grippe, I have prescribed two-grain quinin pills, four times in twenty-four hours, as a preventive remedy. Whenever the salicylate capsules are taken only four times in twenty-four hours during an attack I think it advisable to prescribe two grains of quinin at each meal as a tonic.

"I have never tried the ammonium salicylate capsules as a preventive measure against attacks of grippe, but am disposed now to do so, as I believe they might be useful. Ammonium salicylate is more stimulating and less nauseating than the sodium salt. The caffein is a heart tonic and antineuralgic. All the salicylates have a pronounced antimicrobic action. This is shown most notably in the treatment of rheumatic fever."

In summing up his article Robinson says that, of course, in the use of the capsules, brains must be used and the personal equation of the patient duly considered. Larger doses, continued frequently for a longer time than here stated, might perhaps be advantageously employed with many patients. On the other hand, better results are often obtained by drugs in relatively small doses and not given too frequently after the patient is well under their influence. He finds that a grippal condition will not infrequently hold a patient for two, three or more weeks, and that such individuals may notably improve during a few days and then have a relapse, which relapse is more or less serious according to different conditions, some of which are still problematical as to their effects. Therefore, he thinks it wise not to overdo the matter of drugging in quantity or frequency at any one time, but to allow wisely for the uncertainties and duration of the disease.

A FEW REMARKS ON IMBECILITY, AND A SUGGESTION AIMED AT PREVENTION.

By H. L. FOUGEROUSSE, M. D.,
Louisiana Hospital for Insane, Pineville, La.

The attitude of this fickle world towards the delinquent has changed with the ages. In the time of the ancients they were put to death to preserve the integrity of the race. During the Middle Ages, as fools and jesters, their liberty was unrestrained and they were regarded with superstitious reverence and fear. Ever misunderstood, and appearing as shadows in the brightest spots of civilization, the pendulum again swung backward, and during the days of the Reformatory we find them denounced as "possessed of the devil." Modern views are in keeping with psychologic and physiologic research.

In a legal sense, imbecility may be defined as "the state of mental defect existing from birth or from an early age, due to incomplete cerebral development, in consequence of which the person affected is unable to perform his duties as a member of society." By scientific methods and tests the imbecile has been graded and classified according to mental development.

Except as a caretaker, the public is little concerned with low-grade imbeciles. The medium and higher-grade imbeciles are encountered in every walk of life. Many have worn the royal purple, and even now, in spite of the modern practice of segregating and circumscribing the liberty of these people, the higher type moron is occasionally found administering the affairs of State or directing the managerial end of some governmental department. This, of course, is all wrong, and possibly is a creature of our present political-spoils system. When it is taken into consideration that a large part of our lunatic population were constitutionally inferior prior to the development of psychoses, that 50 per cent of all criminals are imbeciles, and no one has denied that a majority of all murders are committed by imbeciles, and the unrestrained females of this class burden the world with their offspring of epileptics, lunatics and what-not, it is not difficult to determine, in a remote way, the stupendous part played by these deficient people in bringing about the necessity for large and expensively conducted institutions styled "hospitals for insane."

Since we have the mental defectives with us, it may be said in

their behalf that, in a limited sphere, they can be made useful. I have often thought it a wise provision on the part of nature for so many imbeciles to gravitate to the State hospitals for the insane. There is much work to be done about such institutions that is both unpleasant and repulsive, and the imbeciles, with their blunted senses, fit in, and, under proper supervision, accomplish these tasks very well. They also take readily to outdoor occupation. Field-work is compatible and apparently enjoyed by them. They are useful about the kitchen, bake shop, sewing room, piggery and the barns. Many of the better class are here used as auxiliaries to the attendants in preventing other patients to escape. Along industrial lines they may be trained, and, exceptionally, one develops into a finished artisan. One of the main objects of employment for imbeciles is to divert evil propensities into healthful channels. With them, "age does not count," and right here, as Barr has observed, is a seeming paradox, for the mental defectives present three ages at one time: the natural or actual age, which dates from birth; the psychologic, which is the retarded age, and the physiologic, which is generally advanced. Feeble minds go hand in hand with feeble bodies. It is a common observation to note young men with wrinkled visages, habits and bodily enfeeblement that might be expected in men of sixty years.

Malicious, pathological lying, making false accusations, pilfering and a marked cowardice are the characteristics common to most of the higher types of imbecility. Many of the criminally inclined know the nature, but few appreciate the quality of their crimes. Hence, they should not be punished in the usual way, but dealt with from a more modern conception of rectitude. Imbecility can be considered as a condition of continuous childhood. Children act on impulse and instinct rather than training, and it is not until the adolescent stage is well advanced that training takes firm root and becomes part of the individuality of a normal person. Therefore, crimes perpetrated by imbeciles are usually prompted by passion and committed on defenseless persons, and must be regarded as impulsive acts by irresponsible parties, whose inhibitory and self-denial faculties have never been sufficiently developed. No man who is normal and wants to be fair would sanction the legal execution of a ten-year-old boy, no matter how heinous and abominable the crime for which he stood convicted. Why, then, execute the imbecile? Repugnant though he be, an unchallenged enemy to

society and a known murderer, the grown-up imbecile is but endowed with the brain of a child, and is, therefore, as irresponsible. The same legal protective armament which is thrown around the lunatic in these premises should be held out to this type of unfortunates.

What can be done to stem the tide that is leading on to such rapid increase in the number of mental delinquents? They are increasing out of proportion to the increase of normal population. In combatting disease, the physician seeks for and endeavors to remove the cause. Impending danger of an epidemic is met by prophylactic measures. The causes of mental deficiency are so numerous and would carry the investigators into so many intricate ramifications of such an insurmountable nature that hope is almost lost before the problem is well faced. Dogmatic assertion is impossible as to any one cause being the supreme agent of such degeneration. This much may be said, however: The human race chooses and sets apart with great care animals best suited for breeding, and we do not exercise the same discrimination as to race culture. The ignorant and foolish enjoy equally with the wise and capable the sacred office of life-giver. This statement offers the key to the most practical solution of the problem—asexualization of the delinquent. This simple surgical procedure, once legalized and conducted under proper auspices, not as a penalty, but a remedial measure preventing crime and tending to the future comfort and happiness of the defective, will be acceptable to the public mind as a matter of course in dealing with defectives—regarded just as is quarantine—simply a protection against ill. Unless some such plan is followed we may again, in future generations, be forced to adopt the measures so effective in old Sparta.

TETANUS RESULTING FROM THE BITE OF A PIG.

By J. T. CAPPEL, M. D., Alexandria, La.

The unusual source of this infection prompts me in reporting this case.

Case. Married female, age 21 years; family history, negative; past history, usual diseases of childhood, otherwise in perfect health.

Present Illness—I was called to see patient on the night of May 18. She complained of severe pains in her neck and back. On questioning her she denied having had a nail puncture or any other wounds; upon further questioning she said that on May 12, while holding a small pig to put a wire in his nose, the pig bit her on the left thumb. She painted the thumb with iodin and never thought of it afterwards.

Thursday, May 17, she had headaches and pain in her neck and back, but was not sufficient to keep her from her daily work. Friday night I was summoned, and, upon examination, found as follows: A powerfully developed young white female, face flushed, conjunctiva congested, a slight Oriental expression of the face. Her mouth was firmly closed and she was unable to open it sufficiently to take food; her temperature was 99.5°; pulse 80, and full volume.

I gave her a hypodermic of morphia one-quarter grain, hyoscine $\frac{1}{100}$ grain, and a large dose of magnesium sulphate. I opened the wound on the thumb and cauterized thoroughly with carbolic acid. I was unable to give antitoxin that night, for it was nine miles from town and the roads were bad. On the morning of May 19 I gave her 2,000 units deep into the thumb and surrounded its base; I then gave her 18,000 units intravenously. She was then given chloral hydrate, grains 15; sodium bromide, grains 30, often enough to keep her relaxed. The intervals between doses varied between one and a half to five hours. Aspirin was given at intervals for headache. May 20 she received 10,000 more units intravenously; her temperature was then 99°; pulse 80. Her jaws were relaxed sufficiently to take liquid and soft foods. May 23 patient had a slight convulsion; she was given 5,000 units intravenously and 5,000 units in the abdominal wall. Chloral, bromides and aspirin were continued. She was given large quantities of fluids, and enemas were given often to keep the lower bowels emptied.

The temperature ran from 98.6° to 101.4°. May 26 she complained of not being able to see well; she could not count fingers at a distance of five feet. The next day she had hallucinations and delusions. May 29 her mental condition and sight both were greatly improved; temperature was normal.

The patient came to my office on June 12; her mind was apparently normal and vision normal. She said that she did not remember a thing from May 19 to May 29; she felt as if she had been asleep about three days.

Considering the therapeusis of this case, was it advisable to give the antitetanic serum intraspinally or not? Many authors claim the intrathecal route the more efficacious; others make claim for the intravenous. There are six routes in which tetanus antitoxin may be administered in the treatment of tetanus. The intracerebral route will never be used by the average practitioner; the intraneural route will only be used in a few cases; the other four routes are more in common use. The subcutaneous, intramuscular, intravenous and intrathecal routes are chiefly practiced to-day. It has been proven by actual experience that the former routes are the least efficacious; mild cases may be cured by the intramuscular route. At present we select either the intravenous or intrathecal, or the combination of both.

Major F. W. Andrew, of London, prefers the intrathecal route (he has had a wide field of experience in the present European war), while Major H. R. Dean reports twenty-five cases with complete data*; fourteen cases he treated by the intravenous route. His conclusions are as follows:

"In the treatment of tetanus it is obviously desirable to distribute an antitoxin to every part of the central nervous system; the arteries and blood capillaries, with which every part of the gray matter is so liberally supplied, afford ideal channels for the distribution of antitoxin to every region of the brain and spinal cord. On the other hand, serum injected to the lumbar region will in time pass up in the subarachnoid space and may filter through to the cells of the cervical cord, medulla and brain. It is precisely these centers in the cervical cord and in the medulla oblongata which it is most necessary to protect from the tetanus toxin. It is difficult to believe that serum injected into the lumbar theca reaches the cells in the medulla more quickly than serum which is injected into the vein. Moreover, the endothelium of capillary blood vessels freely permits the passage of an albuminous fluid; the lymph, which bathes the cells of the body, while the cerebro-spinal fluid secretion of an epithelium, which holds back almost completely the proteins of the blood, is not, under normal circumstances, concerned in distribution of albuminous substances, and it is difficult to see why it should be chosen as a medium for introduction of antitoxin to the tissues of the central nervous system. The natural channel for the distribution of albuminous substance like antitoxin would seem to be arteries and capillary blood vessels."

The amount of antitoxin that could be given in the intrathecal

* The *Lancet*, May 5, 1917.

route at a single interval is limited, on account of its volume, while in the intravenous route can be given in unlimited amounts. That is the essential point in the treatment of tetanus, just as in the treatment of diphtheria; give the greatest number of units possible at once.

The question of asepsis is to be considered. Very few of our cases are able to be sent to a hospital. For the intrathecal route of treatment, the most rigid asepsis has to be enforced, and even then it is dangerous, while in the intravenous route the ordinary asepsis, as practiced in giving "606," is quite sufficient. I have never seen a serious infection following intravenous medication. The intravenous route is practically painless, much easier to administer, and does not require an anesthetic. The sudden flare-up of temperature, headache and dizziness which follow spinal punctures are never seen in the intravenous route.

It has been demonstrated that tetanus antitoxin in considerable amounts has been found in the cerebro-spinal fluid twenty-four hours after the intravenous injection of 30,000 units of tetanus antitoxin.

This case differs in some respects from the average case of tetanus seen in the European war. Practically all cases of tetanus in Europe had a prophylactic injection of tetanus antitoxin; this increases the incubation period, and the cases are not as severe. This case had no prophylactic treatment, and the incubation period was only six days. This is indicative of a very severe infection. Being guided by our exalted Professor Matas, his dictum, "The shorter the incubation period the graver the prognosis. * * * Any case that develops symptoms within seven days should always be considered a most serious case."

In view of our present knowledge, the intravenous route seems the most practicable and satisfactory, but I do not advise against the combined intrathecal and intravenous route in hospital practice.

PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

SUPRARENAL SYNDROME IN PALUDISM.*

By CLEMENTINO FRAGA, M. D.,
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Bahia, Brazil.

At the session of the Sociedade Medica dos Hospitaes da Bahia, held on December 17, 1916, I had occasion to present a patient in a convalescent state, of suprarenal insufficiency, in whose blood a great many malarial parasites of a tropical variety were found.

That was the first instance I had met with such a case, and at the time I was unaware that any notes had been published, either in this country or abroad, on suprarenal affections, acute or chronic, imputed to paludism. I therefore considered it as a new aspect of the great tropical parasitosis, on the strength of the irrefutable demonstration of Laveran's parasite in the blood of a patient showing clinical phenomena of suprarenal insufficiency, evidenced by intense muscular astheny, deep adynamy, hypothermy, weak, unstable, irregular pulse, disturbance of the digestive organs, such as vomiting, diarrhea, meteorism, pains in the abdomen, etc.

Some days later a new case occurred in our ward, connected with the same cause and exhibiting the same clinical characteristics.

I wish to draw attention here that, upon presenting my first patient to the Sociedade Medica dos Hospitaes, I suggested to that assembly the possibility of the suprarenal gland being injured in paludism, in consideration of the easy aggression of some organs by a disease originally having its seat in the blood, and in consequence allowing of it being quickly localized in any part of the organism. And is it not likely that the algid and asthenic forms might mean a suprarenal injury of tropical malaria, considering the clinical phenomena through which it shows itself and bearing in mind the exaggerated symptoms of the acute insufficiency?

I believed that I was original in my observations when I read in the American journals, the *Medical Record* of January 6, 1917, and the *Journ. of the Amer. Med. Assn.*, also in January, that Paisseau and Lemaire equally observed, nearly at the same time, some cases of suprarenal insufficiency in paludism, with necro-

* Read by title at the Fifteenth Annual Meeting of the American Society of Tropical Medicine, New York, June 5, 1917.

scopical examination, in which the injury of the glands was proved.

It is obvious that at the time when I made my observations I did not know of Paisseau and Lemaire's cases, as communication with America and Europe are just now very uncertain. My first case, presented in December, to the Sociedade Medica dos Hospitaes, is dated November, and it was in the American journals of January that I read the report of the French authors.

Here is a resumé of my observations:

1. V. S., twenty years old, a black man, bachelor, porter, native of Bahia, was admitted into the Santa Izabel Hospital, S. Vicente Infirmary, on November 15, 1916. Adynamic condition, passive attitude, indifference, almost not being able to answer the anamnestic questions. Pronounced muscular astheny, hypothermy, weak, irregular pulse, vomiting, diarrhea, abdominal pains, hypotension (arterial tension 10 ma. and 5 mn—oscillometer Pachon). Increasing growth of the spleen; small enlargement of the liver; normal reflexes. The objective examination of the other organs did not reveal any abnormal condition. Considering in the first instance clinical suspicion of a suprarenal insufficiensy, an opotherapical treatment was undertaken, together with cardiotonics and stimulants. Slight improvement of the patient; the vomiting and diarrhea diminish; the muscular astheny continues to be intense. Some supplementary examinations are made, which demonstrate the existence of Laveran's hematozoon in the blood (of a tropical variety).

The specified remedy answers the case, assisted by opotherapy. All the phenomena gradually disappear; the patient begins to gain strength: the temperature returns to the normal, after having attempted to rise after the first doses of quinin; the tension seeks to reach the normal degree. Complete recovery of the patient, who leaves the hospital the 23rd of December.

II. V. W., 21 years old, a black man, bachelor, native of Germany, merchant, living at Retiro, a suburb of the capital, admitted on January 3, 1917. Complete prostration, inert in bed, cold limbs. He answered as to his nationality, but nothing else. Vomiting, diarrhea, abdominal pain, weak pulse, almost filiform, hypothermy (35.°6 C.), arterial hypotension, inclined to collapse.

The objective examination showed no more than the increased volume of the spleen, abdominal meteorism, pain in the right iliacal pit, the liver normal as to its bulk (13 per cent); tension ma. 10, mn.3—Vaquez).

The remedy urgently required having been prescribed, and profiting by previous experience, in view of the suspicious quarter where the patient lived, I at once examined his blood, with positive result, and cured the patient, who left the hospital on February 7.

In consideration of these cases, and the contribution of Paisseau

and Lemaire—very important from an anatomical standpoint—I believe I have thoroughly demonstrated the lesion of the suprarenal glands of a *suprarenal form of paludism,* suggested to the Sociedade Medica dos Hospitaes.

These lines are, as it were a preliminary note, the subject of which is to be treated in detail by one of my assistant pupils in his thesis.

BLISTER BEETLES AS A PUBLIC NUISANCE.

BY

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AND

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Contents: Introductory—Khartoum Epidemic—Ætiology—Diagnosis—Prognosis—Treatment—References—Illustrations.

Introductory: The knowledge that blisters can be caused upon the skin by the contact of certain kinds of beetles is extremely ancient. We have been unable to trace any reference to them in the writings of Susruta but they were used as internal medicines for jaundice, apoplexy and dropsy by Hippocrates in the 5-4th. century B. C. who however was apparently unacquainted with their blistering properties while the name *"Cantharis"* was used by Aristotle in the 4th. century B. C. Dioscorides in the first century Anno Domini stated that the variety possessing yellow transverse bands and a large, fat, oblong body were more efficacious than those of only one color. Pliny, also in the first century, advised their use for skin diseases such as leprosy and lichens, as an emmenagogue, and as a diuretic. He also mentions that they will cause blisters and eschars on the skin, a fact said to have been discovered by Archigenes (Fumouze) a contemporary of Celsus, but there appears to be some doubt about this and it is possible that the credit should be given to Aretaeus the Cappadocian (D'Orbigny), but our literature in Khartoum does not permit us to settle this point. Pliny says that while all authors are agreed that the wings are the best parts from which to obtain the medicinal remedy still they are by no means unanimous in their opinions as to the origin of the blis-

tering fluid some thinking that it comes from the mouth and others from the feet. He recognized three varieties: one plump and fat with yellow markings on its wings, another smaller, broad and hairy, and a third, which he says is the worst of all and the least efficacious as a medicine, *"of one entire color and lean withal."*

These writings were the classical works of the middle ages as may be judged by studying the degenerate account of these beetles given in Chapter XIX of the Tractus de Avibus of the 1511 edition of the Ortus Sanitatis which was originally published in 1491 being largely, *but by no means wholly,* based upon the earlier German Herbarius which in its turn is thought to be derived from manuscripts of great antiquity. In this way ancient knowledge was kept alive and Moffat enabled in 1634 to write a long chapter on Cantharides which appears to have further stimulated interest in these matters. Thus when Linnaeus, Fabricius and later Latreille began to systematize the information collected together concerning these insects it was found that a number of genera could be formed, the species of which were scattered all over the world, while still later Burmeister invited attention to several varieties found in the Tropics.

There is a book consisting of some 554 pages written by Beauregard and entitled *"Les Insectes Vésicants"* which appeared in Paris in 1890 but this work seems to be entirely out of print and cannot be obtained although we have made many attempts to do so.

Notwithstanding all this ancient and modern knowledge books upon Tropical Medicine are singularly silent on this subject and, except for very brief references in the latest edition of Mense's Handbook and a still briefer mention in Castellani and Chalmers' Manual of Tropical Medicine, we are not aware that the subject has been brought to the notice of the Tropical Practitioner and yet it is of importance for as Rodhain and Houssiau have pointed out it is not easy to account for the occasional occurrence of cases showing an eruption of a few scattered blisters on the neck, back, arms or legs until an epidemic forcibly brings the subject to one's knowledge.

The lack of book information with regard to this form of Dermatitis in the Tropics has however been considerably improved of late years by certain papers which we will briefly review.

The first, with which we are acquainted, is that published in 1912 by P. Da Silva in which he draws attention to an outbreak of a skin

eruption characterized by erythema, and intense pruritis followed by ulceration and cicatrisation among cultivators working on the banks of the rivers, Sao Francisco, Itapicurû and Jacuricy in the interior of Bahia. This was traced to an insect called by the natives Podo or Trepa moleque and which he identified as *Paederus columbinus* de Laporte (1832) which belongs to the order *Coleoptera* Linnaeus 1735 and to the family *Staphylinidae* Leach 1817.

The second reference is that by Adolf Eysell in the 2nd edition of Mense's Tropenkrankheiten, page 247, where he draws attention to *Paederus peregrinus Fabricus* (1801), which causes erythema, vesication and eschar formation among the inhabitants of the island of Sunda in the Malay Archipelago.

The third reference is that by Rodhain and Houssiau in 1915 when they gave an account of an epidemic of a *Seasonal Vesicular Dermatitis* occurring in Léopoldville in the Belgian Congo in April and May of that year. They traced this epidemic to an unknown species belonging to the genus *Paederus* Fabricius 1775 i. e. allied to the species mentioned above by P. Da Silva. In the discussion on this paper Roubaud stated that seasonal vesicular dermatitis was frequently observed in Senegal where *Epicauta flavicornis* Dujardin (1838), *Cantharis vestita* Dufour (1821) and a species allied to *C. melanocephala* were known to be present. Bequaert also stated that he was acquainted with a vesicular dermatitis occurring at Boma in the Belgian Congo.

The last reference is that by P. H. Ross in 1916 describing an outbreak of a vesicular dermatitis in the months of July and August in Nairobi in British East Africa which was traced to *Paederus crebripunctatus* Epp. (sic).

This completes the literature as we know it with our restricted facilities for reference and we will therefore pass on to the consideration of the Khartoum epidemic.

Khartoum Epidemic: We are well acquainted with the fact that every year in or about the month of August blister beetles may be seen in the early morning on herbs, bushes or trees in Khartoum and that at night they may invade houses or may be found in gardens being especially attracted by the artificial light.

It is customary in this town in the hot weather to have the evening meal in the garden in which the greater portion of the evening is spent and, as it is usual to have these gardens illuminated, it is obvious that the beetles have every opportunity for coming in con-

tact with the human being. Nevertheless as a rule few people suffer from their attacks, but this was quite different in August, 1916 when, for some reason or another, they were specially abundant in the gardens of the British Barracks, the Gordon College and the Sudan Club and a large number of Europeans, including some 40 British Soldiers, suffered from their attacks. Egyptians suffered but slightly and we are not aware of any true native of the Sudan being attacked. So long as the insect merely walks over the skin, and is not irritated, it does no harm. If however it starts to crawl up the arm, down the neck or up the trousers it is soon annoyed by the clothing and excretes the blistering liquid.

If only a small quantity of this fluid is ejected then only a single small bulla may form as is depicted in Fig. 4, but if it moves a series of these may be produced. If however the blistering fluid is well rubbed into an area then an eschar forms, with considerable surrounding irritation, as is shown in Fig. 6 which was taken from the elbow of a person in whom a series of blisters ran from the wrist to the arm but were worst about the elbow. Occassionally, instead of a series of blisters, one long blister may extend a considerable distance along the fore arm or down the back.

Usually there are no immediate symptoms and it is only after an interval of 12-24 hours that an itching or burning sensation or even severe pain invites attention to the affected area when the blister or blisters varying in size and number as already stated are to be found full of yellowish serum and situated on an erythematous areola.

As a rule the victim does not see the insect and may not remember one crawling on him, and he may be entirely at a loss to account for the blisters. It is here that the difficulty of diagnosis arises in that the practitioner may see only one or two cases and, at the moment, may not think about these insects.

If pricked and carefully treated they quickly vanish and cause no further trouble, but if they burst, as depicted in Fig. 5, and are allowed to be rubbed by the clothing, they become raw, very tender and painful, a condition which may last for days.

More rarely a considerable portion of the blistering liquid appears to get well rubbed into one spot (Fig. 6) and then a small white eschar is formed which may be surrounded by an extensive inflammatory areola with its surface raised above the central necrotic area, and covered with numerous small red papules (Fig. 6).

The whole region becomes very painful and tender and some couple of weeks elapse before healing is completed, which generally takes place without any cicatrisation.

So far we have not met with any septic infections as the result of these sores, but in the treatment presently to be recorded we guarded against this.

After being "en evidence" for some three to four weeks the beetles disappeared and the epidemic ceased.

With regard to a name for the dermatitis described above it seems to us that with a slight modification of "bullous" for "vesicular" Rodhain and Houssiau's phrase *Seasonal Bullous Dermatitis* is peculiarly suitable as expressing the principal clinical characters of the complaint.

Ætiology: The Blisters Beetles depicted in Fig. 1 were those which were found commonly in the houses, on the tables and in the gardens of Khartoum at the time of the epidemic.

By the kindness of Mr. Kenneth G. Blair of the British Museum we are able to give the names of these insects. The lower two beetles shown in Fig. 1 are male (the smaller) and female (the larger) individuals belonging to the species *Epicauta sapphirina* Maeklin 1845, while the upper two beetles in the same figure are male and female individuals of the species *Epicauta tomentosa* Maeklin 1845.

As far as we know these two species were the only insects responsible for the epidemic for although a third species (Fig. 2) named *Mylabris nubica* de Marseul 1870* was found at this time in Khartoum still it was so rarely met with that its share in the epidemic must have been negligible. It is interesting in having yellow bands on its wing cases and according to Dr. Beam, the Research Chemist of these laboratories, beetles of this genus have been found to contain considerable more cantharidin than the usual officinal variety of blister beetle, but this species does not concern us at present and will not be mentioned again in this paper.

With regard to classification the genus *Epicauta*, which belongs to the family *Cantharidae* Leach, 1817, was founded by Count Dejean in his *Catalogue des Coléoptères* 1802-1837;" it contained at first species derived from the genera *Lytta* Fabricius 1775 and *Cantharis* Linnaeus 1735. According to D'Orbigny's Dictionnaire the type species is *Epicauta (Lytta) gigas* (Fabricius 1792) while the other

* De Marseul appears to have obtained this insect from Bohemann and gives Senegal and Nubia as its habitats.

species, which are now very numerous, are scattered all over the world.

The only other beetles so far accused of causing *Seasonal Vesicular Dermatitis* belong to the genus *Paederus* of the family *Staphylinidae* whereas our species are classified as *Cantharidae* and therefore it seems to us that it may be useful to the Tropical Practitioner to indicate how these families may be recognized.

The insects which we were investigating belonged to the order *Coleoptera* because they possessed a mandibulate mouth, a lower lip not divided along the middle and two pairs of wings of which the anterior (elytra) were shell-like and met accurately in the middle line forming a straight suture and a case like protection for a portion of the abdomen.

Our species came into Sharp's *Series* 4 *Heteromera* because the front and middle tarsi were five-jointed, while the hind tarsi were only four-jointed.

It was also obvious that as they possessed a head with an abrupt neck, and no coadaptation between the elytra and the sides of the abdomen while each of the claws of the feet had a long appendage (Fig. 3) closely applied to its ventral surface, they belonged to the family *Cantharidae* and, as they possessed wings, to the subfamily *Cantharinae* but the lack of literature in Khartoum prevented us proceeding any further in the classification and we fell back upon the kind help of the British Museum.

The *Cantharidae* can readily be distinguished from the *Staphylinidae* or Rove Beetles because the latter lack the characteristic appendage on the ventral aspects of the claws (Fig. 3).

It is thus evident that the beetles which we are considering are quite distinct from those found by other observers as causal agents of their epidemics.

August was the breeding season for our species as we observed the female laying its eggs. We however were unable to make any further studies in the life history of our specimens but that of an allied species *Epicauta vittata* Fabricius 1775, which is common in many parts of America, has been worked out by Riley whose results may be briefly summarized.

The beetle lays its *eggs* (1st. stage) in spots frequented by an American locust of the genus *Caloptenus* Burmeister 1838 and in a few days the *Triungulin larva* (2nd stage) appears and wanders about until it finds its food in the form of the locusts eggs which are laid underground. After eating a couple of eggs it moults and

becomes the *Caraboid larva* (3rd stage) which after a week moults and becomes the *Scarabæoid larva* (4th stage). Later it again moults and becomes a *second helpless Scarabæoid larva* (5th stage). It now ceases to live on the locusts eggs, which it leaves and becomes a *Coarctate larva* or pseudo-pupa (6th. stage) in which condition it remains many months. When however favorable conditions permit it becomes a *Scolytoid larva* (7th. stage) which quickly becomes a *Pupa* (8th. stage) from which in some six days the *Imago* (9th stage) emerges.

This complicated life cycle and prolonged larval existence explains the complete absence of the blister beetles from Khartoum for about eleven months of the year. In or about the month of August they are "en evidence" as this is their breeding season. In these beetles (like so many other insects) the length of the life of the adult is but short, being intended essentially for the purposes of sexual reproduction. After the eggs have been laid, the beetles die and disappear and thus the epidemic of Seasonal Bullous Dermatitis comes to an end, as the cause thereof is removed

During their short existence the beetles spend the early morning and apparently the night on herbage, shrubs and trees in Khartoum. When the heat increases as the day grows older they seek refuge in cracks in the ground and other places from which they emerge in the cool of the evening and being attracted by artificial lights are, by this means, brought into contact with human beings.

Without doubt the blistering properties are protective and it appears to us that the active principle must be contained in the greenish fluid which can be made to exude from any part of the insect, but from no part with greater ease and less stimulation than from the joints of the legs and especially from the so-called knee joint.

Dr. Beam, the Research Chemist of these laboratories, has investigated the cantharidin content of *Epicauta tomentosa* and finds it to be distinctly lower than that of the officinal *Cantharis vesicatoria,* but there is no doubt about the blistering properties of both the species in question as an *Epicauta sapphirina* was caught by a British Soldier on his neck, where subsequently a blister appeared, and although Captain Innes, R. A. M. C. tried the experiment of rubbing *E. sapphirina* on his arm and failed, for an unknown reason, to produce an eruption, he was very successful with *E. tomentosa,* the result being shown in Fig. 5.

There are of course many more blister beetles known to exist in the Sudan but the above were those which we met with in connection with *"Seasonal Epidemic Dermatitis"* which we have described above.

Diagnosis: The characteristic feature of *Seasonal Bullous Dermatitis* are as follows:

1. The sudden appearance of bullæ, varying in size and number, surrounded by a certain amount of inflammatory redness.

2. The persons in whom the bullæ are found are usually in good health; and, as a rule, they are unable to assign a cause for the eruption.

3. The bullæ are single or grouped together, often in a row.

4. There is no tendency to bilateral symmetry.

5. In a given individual usually only one region of the body is affected.

6. A number of healthy people living in the same place may be similarly affected at the same time.

7. The bullæ only appear during a certain season of the year.

The differential diagnosis requires to be made from the following accidents and disease causing bullæ:

1. Seasonal Bullous Dermatitis may be readily separated from the bullæ caused by burns and scalds, and by chemicals, by the history of the case.

2. It has also to be differentiated from the various forms of *Hydroa* as follows:

a. It can be separated from the milder forms of *Dermatitis herpetiformis* by the absence of severe itching and of circinate and papular erythematous lesions and by the absence of the tendency of the bullæ to be grouped like herpes.

b. From the rare form of Dermatitis herpetiformis called *Hydroa pruriginosa* it can be diagnosed by the larger size of its bullæ which do not appear in successive crops.

c. From *Dermatitis recurrens* it can be distinguished from the hiemal variety by only appearing in warm weather and from the æstival in not being papulo-vesicular in character.

3. It may be differentiated from *Herpes Zoster* by the absence of severe pain lasting for 3-4 days before the appearance of the eruption and by the non-distribution of the bullæ in Head's areas.

4. From *Acute Pemphigus* it is easily separated by the absence of the severe constitutional symptoms.

5. It can be recognized as distinct from *Dermatitis venenata* due to plants by the absence of the marked œdema and erythema which generally attack the face, hands and genitalia and by the presence of bullæ.

6. It is easily separable from *Dermatitis* caused by mites as these give rise to small wheals and vesicles and not to bullæ.

7. Ant and tick bites, stings of wasps, bees, scorpions, centipedes, etc., are at once differentiated because the eruption in the present instance is bullous.

As the eruption described by Rodhain and Houssiau and by Ross are stated to be vesicular it is possible that these may be differentiated clinically from our bullous type, while it certainly is not so severe as the eruption described by P. Da Silva in that ulceration and cicatrisation are absent but perhaps these may be only differences in details and not in essentials.

Prognosis: As all our cases recovered fairly rapidly and as we have not met with any signs of cicatrisation the outlook as regards rapidity of cure and the absence of scarring is good.

As we have never met with any case of septic infection directly referable to this eruption the outlook as regards this possible complication is also good.

It will however be remembered that P. Da Silva describes a much severer form of dermatitis than that which we observed and that this was followed by cicatrisation.

Treatment: The best treatment in our experience is to prick the blister and apply a dressing of 1 in 80 Carbolic Acid, but the majority of the victims just let the lesions alone and they heal up rather more slowly than when treated and are more painful. If they become rubbed, they are often very painful as was the one depicted in Fig. 5.

Khartoum, March 5th., 1917.

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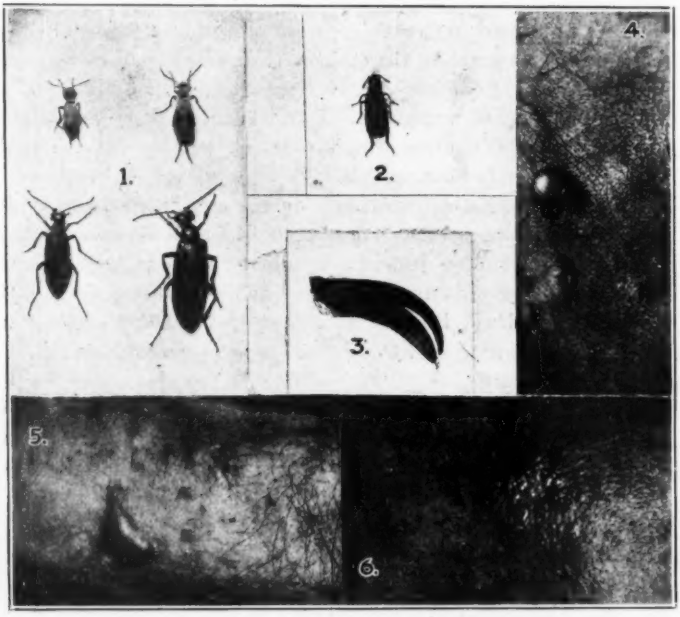

ILLUSTRATIONS.

These Photographs May With Advantage be Examined by Means of a Reading Lens.

FIG. 1. Blister beetles concerned in the Khartoum Epidemic of Seasonal Bullous Dermatitis. The large beetles on the right hand side are females and the smaller on the left hand side are males. The upper and smaller pair belong to the species *Epicauta tomentosa* Mæklin 1845, while the lower and larger pair belong to the species *Epicauta sapphirina* Mæklin 1845.
About natural size. *Photograph.*

FIG. 2. Small blister beetle with yellow bands on its wings. This beetle belongs to the species *Mylabris nubica* de Marseul 1857, and apparently was not responsible for the epidemic, as it was rarely met with.
About natural size.

FIG. 3. A claw from *Epicauta sapphirina* showing the long appendage which in the natural condition is closely applied to it.
x 37 diameters. *Photomicograph.*

FIG. 4. Small blister just above the ankle in an Egyptian army officer.
Less than natural size. Photograph.

FIG. 5. An unburst and burst blister prodced experimentally by means of *Epicauta tomentosa.*
Less than natural size. Photograph.

FIG. 6. The elbow of a case of severe dermatitis produced by one of these blisters. There was also a row of blisters running along the forearm for a short distance above the wrist and three small blisters on the arm above the elbow.
Less than natural size. Photograph.

MYCETOMA AND PSEUDOMYCETOMATOUS FORMATIONS.

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Contents: INTRODUCTORY—THE MYCETOMAS—THE PARAMYCETOMAS—THE PSEUDOMYCETOMAS—DIAGNOSIS—PROGNOSIS AND TREATMENT — SUMMARY — REFERENCES — ILLUSTRATIONS.

Introductory: The tropical practitioner usually understands by the word Mycetoma a swelling in some part of the body which, when first seen, is often discharging pus from one or more sinuses (Fig. 1), while in this pus he is able, without much difficulty, to detect hard or soft bodies of varying size and color. These bodies he calls grains (Fig. 2, 3 and 4), and he also recognizes as belonging to the Mycetoma Group all tumours in which he is *readily* able to see these bodies after removal of the whole or a portion of the growth (Fig. 5).

There is therefore no particular difficulty in the diagnosis of Mycetoma, if it be defined so as to cover the above conditions only, but there is considerable difficulty in classifying those Sarcomatous and Epitheliomatous-like growths in which grains are either absent, or are almost microscopical in size, and are therefore neither self-evident in the discharge nor in the tissue itself. After very con-

siderable experience of the difficulties in diagnosis of this form of tumour we have decided that it is worthy of a special name and definition and as the only common feature of the heterogenous collection of specimens which has been gradually gathered together in this laboratory is the fact that a fungus can be found with or without the presence of minute bodies of the same nature as the typical grain, we have decided to call this group of tumours *Paramycetomas.*

From a clinical point of view there are conditions of the foot found in certain general diseases which more or less resemble a Mycetoma in external characters, but in the discharge from which grains cannot be found. As these appear to be of importance from a diagnostic point of view we desire to emphasize their existence by terming them *Pseudomycetomas.*

It is with the intent of defining these various groups of mycetomas, paramycetomas and pseudomycetomas and their causal organisms as well as their clinical differentiation and treatment that we venture to bring the following remarks to the notice of the Members of the American Society of Tropical Medicine.

The Mycetomas: In a recent paper entitled "A Sudanese Maduromycosis" we have proposed a definition of the term Mycetoma which, with slight modifications, is as follows:

"The term *Mycetoma* includes all growths and granulations which produce enlargement, deformity or destruction in any portion of the tissues of men, or animals, and which are caused by the invasion of the affected area by fungi, belonging to different genera and species, which produce bodies of varying dimensions, color and shape composed of hyphæ, and sometimes chlamydospores, embedded in a matrix. These bodies, which are capable of giving rise to mycelial filaments on germination, are termed *grains* and are found either embedded in the pathological tissue forming these growths and granulations, or escaping freely in the discharge therefrom."

This definition is illustrated by Fig. 1, which depicts the sinuses on the skin of an advanced Mycetoma of the foot and at the same time shows its internal appearances and the presence of grains in situ.

Fig. 3 shows in greater magnification a black grain, while Figs. 2 and 4 illustrate the appearances of yellow and red grains, respectively.

Grains are sometimes soft and sometimes hard, but the latter may have their consistence diminished by soaking in caustic soda

solution or in eau de Javelle. The naturally soft or the artificially softened grain may be placed in a little water and teased into small pieces by needles and subsequently flattened by applying pressure by means of a cover glass, or (as often can be done) a preparation can be made by taking a small portion of a grain, surrounding it with a little water and pressing it flat by means of a cover glass.

If these simple preparations are examined first by a one-sixth of an inch dry objective and subsequently by an oil immersion lens it will be found that they are composed of two quite different types of fungi.

Fig. 6 shows a portion of a hard yellow grain treated as described above, and it will be noticed that the fungus depicted is composed of large segmented mycelial filaments possessing well-defined walls, while one thick-walled chlamydospore can also be seen on the right margin of the photograph.

Fig. 7, on the other hand, depicts quite a different type of fungus composed of very fine non-segmented mycelial filaments, in which the walls are not well defined and in which chlamydospores are absent.

This is a striking difference, and so simply made out, that it appeared to us to be suitable for the purposes of *clinical diagnosis* and also for *scientific classification.*

We therefore divide the Mycetomas into two groups, as follows:

I. Grains containing large segmented mycelial filaments.	Subgroup A. *The Maduromycoses.*
II. Grains containing very fine non-segmented mycelial filaments, looking like bacilli embedded in a matrix.	Subgroup B. *The Actinomycoses.*

We will now consider the further differentiation of these two main divisions of the Mycetomas.

Subgroup A. The Maduromycoses: This form of Mycetoma may be further classified, according to the color of the grains, into:

I. Black Maduromycosis.
II. White or Yellow Maduromycosis.
III. Red Maduromycosis.

I. *Black Maduromycosis:* This variety of Maduromycosis is, in our opinion, best classified according to the continent in which it is found, as follows:

a. The American Black Maduromycoses.
b. The African Black Maduromycoses.
c. The European Black Maduromycoses.
d. The Asian Black Maduromycosis.

a. *The American Black Maduromycoses:* These have been studied in a most admirable manner by Wright as long ago as 1898 and by Seheult more recently (1916) and are capable of being divided into:

1. *Wright's Black Maduromycosis,* found in the United States and of which the systemic position of the causal fungus is unknown. As this case occurred in an Italian woman, who had left Italy, where the infection is known to occur, an indefinite number of years before the onset of the disease, it is open to doubt whether the disease was acquired in America or in Europe. This is especially so, as there is no history as to whether she *did* or *did not* visit Italy during the incubation of the complaint.

2. *Seheult's Black Maduromycosis,* of which the nature of the causal organism is unknown. Again it is interesting to note that the case occurred in a native of India, who had left that country some twelve years before the onset of the disease, and apparently during this period he had never returned to India.

These two cases, separated by such a long interval, are the only two Black Maduromycoses with which we are acquainted as occurring in America, but perhaps some of the members of the American Society of Tropical Medicine may be able to correct us and to add to the numbers of such cases. Indeed, the point is of considerable interest, because upon it turns the answer to the question whether there is, or is not, Black Maduromycosis in the American Continent. It will be observed that in both of the recorded cases the victim was a native or Italy or India, from both of which places cases of Black Maduromycoses have been reported. We are quite unacquainted with the latency of the disease—*i. e.,* of the fungus can lie latent in the tissues for years, being kept in check by the natural defensive mechanism of the body until the local resistance of the part is lowered by a blow or other injury, when the causal agent is enabled to grow, and so cause the Mycetoma.

b. *The African Black Maduromycoses:* Four varieties of this form of Black Maduromycosis are known, viz:

1. *Brumpt's Black Maduromycosis* found at Djibouti in French Somaliland and caused by *Madurella mycetomi* (Laveran, 1902).
2. *Nicolle* and *Pinoy's Black Maduromycosis* found in the Oasis of Tozeur, in Southern Tunisia, and caused by *Madurella tozeuri* (Nicolle and Pinoy, 1908).
3. *Bouffard's Black Maduromycosis,* also found at Djibouti, in French Somaliland, and caused by *Aspergillus bouffardi* Brumpt, 1905.
4. *Chalmers* and *Archibald's Black Maduromycosis,* found at Khartoum, in the Anglo-Egyptian Sudan, and caused by *Glenospora khartoumensis* Chalmers and Archibald, 1916.

The further differentiation may be effected as follows:

A. Microscopical preparations show Aspergillar heads. — *Bouffard's Black Maduromycosis*

B. Microscopical preparations do not show any Aspergillar heads (Fig. 8), but on cultivation the following types of spores are found:

a. The Arthrosporal type of Thallospore (for the explanation of these names see Chalmers and Archibald, 1915, in references).

1. Grains larger than a pin's head in diameter. — *Brumpt's Black Maduromycosis*

2. Grains smaller than a pin's head in diameter. — *Nicolle and Pinoy's Black Maduromycosis*

b. The Aleuriospore form of the conidial type of spore (Fig. 10). — *Chalmer's and Archibald's Black Maduromycosis*

c. *The European Black Maduromycoses:* The causation of only one variety is known with certainty, and from this the other two may or may not be separable. At present it is better to consider the following three forms as distinct, pending further investigation:

1. *Bassini's, Köbner's* and *Schmincke's Black Maduromycosis,* respectively found in Padua, Italy (we are unacquainted with the particular locality), and in Kissingen, and of which the nature of the ætiological fungus is unknown.

2. *Bovo's Black Maduromycosis,* found in Genoa, and of which the causal agent is called *Madurella bovoi* Brumpt 1910, but this classification must be accepted with reserve, as the fungus has never been cultivated and may not agree with the definition of the genus Madurella, as altered by Pinoy in 1912, subsequent to the cultivation of *M. mycetomi* and *M. tozeuri.*

3. *Pepere's Black Maduromycosis,* found at Domusnovas, in the province of Cagliari, in Sardinia, and caused by *Scedosporium sclerotiale* Pepere 1914.

It may be that all these varieties of Italian Black Maduromycoses belong to one and the same causal agent, viz: Pepere's organism, but this is a question which only future investigations can decide, and it may be that this was the cause of Wright's American Black Madurocysois, but this is a point which cannot now be settled.

d. *The Asian Black Maduromycosis:* This type of Black Maduromycosis requires more investigation, as at present only one form is known, viz:

1. *Carter's Black Maduromycosis,* found in India, and caused by a fungus cultivated from a case occurring in an Indian soldier in France by Captain H. C. G. Semon, M.D., R.A.M.C. So far, this fungus has remained unnamed, but we now propose the nomenclature: *Glenospora semoni* Chalmers and Archibald 1917, and we distinguish it from *Glenospora khartoumensis* by the differences exhibited in cultures on clear maltose agar, on glucose agar and on blood serum. Figs. 11 and 12 depict the marked differences of the growths on clear maltose agar.

II. *White* or *Yellow Maduromycosis:* This division of the Maduromycoses may be classified, like the black, by the continents in which the cases became infected, as follows:

a. The African White Maduromycosis.
b. The European White Maduromycoses.
c. The Asian White Maduromycosis.

It will be observed that we are unacquainted with any American White Maduromycosis.

a. *African White Maduromycosis:* Only one variety is known, and this is:

Nicolle and *Pinoy's White Maduromycosis,* found at Sadiki, in Tunisia, and caused by *Sterigmatocystis nidulans* (Eidam, 1883).

The grains, which are very small, are white or slightly tinted, and on disassociation show septate and branched filaments, with expanded extremeties on some, of which spores arranged in rows can be seen. It has been cultivated successfully.

b. *European White Maduromycoses:* Two forms of this variety are known: viz:

1. *Brumpt* and *Reynier's White Maduromycosis,* found in Paris and caused by *Indiella reynieri* Brumpt 1906.

2. *Tarozzi* and *Radaeli's White Maduromycosis,* found by the former at Ibono, in the Province of Cagliari, in Sardinia, and by the latter near Florence, and caused by *Scedosporium apiospermum* (Saccardo, 1911).

The two varieties are easily differentiated by the varying characters of the grain. In the French variety this is large (up to one millimetre in diameter), soft and appear like a ribbon rolled on itself. It is composed of fine branched septate filaments with evident walls, and thick-walled chlamydospores.

In the Italian variety the grain is small, rather hard and yellowish.

c. *Asian White Maduromycosis:* We are only acquainted with one type—*i. e.:*

Brumpt's White Maduromycosis, found in India and caused by *Indiella mansoni* Burmpt 1905.

III. *Red Maduromycosis:* There is only one form of Red Maduromycosis known, viz:

Balfour and *Archibald's Red Maduromycosis,* found at Port Sudan, in the Red Sea Province of the Anglo-Egyptian Sudan, and characterized by possessing very hard, spherical grains of a rich red color, showing indications of an aspergillar-like fungus of unknown classification.

Subgroup B. The Actinomycoses: The second division of the mycetomas contains eleven examples, which may be further classified according to the color of the grains into:

I. Black Actinomycosis.
II. Yellow Actinomycosis.
III. Red (sometimes yellowish) Actinomycosis.

I. *Black Actinomycosis:* Only one variety of this is known viz:

Babe's and *Mironescu's Black Actinomycosis,* found in Roumania and caused by an unknown fungus.

II. *Yellow Actinomycosis:* This form is well known in North America, and Sutton, of Kansas City, in 1913, in addition to drawing attention to four previously described cases, added two from his own practice. The usual microsopical appearances shown in Yellow Actinomycosis are depicted in Fig. 19, but the only method, known to us, of distinguishing the nine forms of Actinomycosis classifiable under this heading is by cultivation, as will be indicated below. The nine varieties known to us are:

1. *Israel's Yellow Actinomycosis,* found in Europe and America (North and South), and caused by *Cohnistreptothrix israeli* (Kruse, 1896).
2. *Ravaut* and *Pinoy's Yellow Actinomycosis,* found in France and caused by *Cohnistreptothrix thibiergei* Ravaut and Pinoy 1909.
3. *Acland's Yellow Actinomycosis,* found in Europe, but the distribution of this form requires further investigation.. It is caused by *Nocardia Bovis* (Harz, 1877).

4. *Bouffard's Yellow Actinomycosis,* found atDjibouti, in French Somaliland, in the Anglo-Egyptian Sudan, and in Southwest Africa, and caused by *Nocardia somaliensis* (Brumpt, 1906).

5. *Krause's Yellow Actinomycosis,* found in Europe and caused by *Nocardia krausei* (Chester, 1901).

6. *Garten's Yellow Actinomycosis,* found in Europe and caused by *Nocardia garteni* (Chester, 1901).

7. *Hesse's Yellow Actinomycosis,* found in Europe and caused by *Nocardia liquefaciens* (Hesse, 1892).

8. *Chalmers* and *Christopherson's Yellow Actinomycosis,* found in the Anglo-Egyptian Sudan, where it appears to be not uncommon and caused by *Nocardia convoluta* Chalmers-Christopherson 1916.

9. *Eppinger's Yellow Actinomycosis,* found in Europe, America (North and South), Asia and Africa, and caused by *Nocardia asteroides* Eppinger 1890.

These Yellow Actinomycoses may be differentiated as follows:

I. Cultivation difficult; grow best anærobically; arthrospores absent.	Genus 1 *Cohnistreptothrix*
a. Clubs present:	
1. Grains yellow.	1. *israeli*
2. Grains very small and white.	2. *thibiergei*
II. Cultivation easy; grow best ærobically (Figs. 13 and 14); arthrospores present (Fig. 15).	Genus 2 *Nocardia*
a. Clubs present (Fig. 18)	3. *bovis*
b. Clubs absent (Fig. 16).	
1. Grains surrounded by a hard sheath, insoluble in liquor potassa and eau de Javelle.	4. *somaliensis*
2. Grains without such a sheath (Fig. 16):	
G[1] Growth on gelatine absent.	5. *krausei*

G^{ii} Growth on gelatine present.

M. Inspissated blood serum liquefied (Fig. 13):

x. Pathogenic for laboratory animals, growth on potato white, medium becomes greenish in color. 6. *garteni*

y. Non-pathogenic for laboratory animals, growth on potato, yellowish or buff color, medium unchanged (Fig. 9):

r^{i}. Gelatine liquefied, and growths not convoluted. . . . . 7. *liquefaciens*

r^{ii}. Gelatine not liquefied, and growths markedly convoluted. . . . . 8. *convoluta*

N. Inspissated blood serum not liquefied, growths yellowish orange to brick red. . . . . 9 *asteroides*

III. *Red (sometimes Yellowish) Actinomycosis:* Only one form of which is known:

Carter's Red (sometimes Yellowish) Actinomycosis, found in India, Hawaii, Argentina, Cuba, Senegal, Algeria, Cyprus and Somaliland, and caused by *Nocardia indica* (Kanthack, 1893), synonym, *Streptothrix maduræ* (Vincent, 1894).

This organism has red or yellowish grains, which produce pinkish colonies on the agars (Fig. 17) and on potato. Kanthack's name was overlooked until recently.

The Paramycetomas: Specimens from different parts of the body are often sent to these laboratories from cases which have been diagnosed clinically, and provisionally, malignant disease (Fig. 21) of various kinds, *e. g.*, they have been thought to be sarcomata, epitheliomata and rodent ulcers, or sometimes merely sent

with the label "tumor," and taken from the face, limbs, body, mouth, intestines or vagina. So far, owing to the specimens being sent in preservative media, often from long distances, or owing to the growth of large numbers of contaminatory organisms, especially when the site affected is a portion of the bowel, we have failed to obtain cultures. Nor is this surprising, when in some cases the tissues and grains are found to contain these secondary bacilli. It must be remembered that a secondary blastomycotic infection has been described by Flu as taking place in a mycetoma of the foot caused by *Nocardia indica*. The microscopical sections, however, may show one of four peculiar features:

1. Peculiar eosinophile bodies (Figs. 22, 23 and 24).
2. Nocardial filaments (Fig. 20).
3. Minute grains containing Nocardial filaments and spores (Fig. 25).
4. Very rarely evidence of other organisms, septate and much broader than a typical Nocardia or Cohnistreptothrix (Fig. 26).

The tumors often neither clinically resemble the growths which we have described above as *Mycetomas*, nor are they the same as the *Pseudo-Actinomycoses* of Mosetig-Moorhof, Dor and Poncet, because these conditions are characterized by the presence of a few large yellow grains in the discharge. These grains are composed of a tangle of filaments, between which lie the usual Nocardial spores, which are often mistaken for micrococci. This *Pseudo-Actinomycosis* formation of Poncet does not differ from the definition of the Actinomycotic form of Mycetoma described above. Moreover, its organisms, *Nocardia ponceti* Verdun 1913 appears to agree with *Nacordia krausei* Chester 1901, of which it becomes merely a synonym.

The histological appearances of a paramycetoma may be seen in Figs. 27 and 28, but in other forms giant cells, resembling those seen in Fig. 19, may be so numerous as to give the observer the impression that he is examining a myeloid sarcoma.

Here, in our opinion, should also be classified those tumors which go by the name *"Juxta-articular nodules"* (Fig. 30), and of which we have met with two cases in the Anglo-Egyptian Sudan, where their presence has never before been recorded. These growths are caused by *Nocardia carougeaui* (Brumpt, 1909).

We therefore desire to distinguish the above condition from the Mycetomas of the Actinomycotic form, to which they are closely related, and from the *Pseudo-Actinomycoses* of Poncet, which are really Mycetomas, and therefore we suggest *"Paramycetoma"* as a suitable name.

We define Paramycetoma as follows:

"All growths and granulations producing enlargement, deformity and destruction in any part of the tissues of men, or animals, which are caused by the presence of fungi of any nature whatsoever, but in which grains are either entirely absent or are so few in number and small in size as to escape observation without prolonged search."

The diagnosis of this form of Mycetoma has to be made by the examination of microscopical preparations, and is based upon the discovery of one or more of the four peculiar features mentioned above, and which we will now discuss in greater detail.

1. *Peculiar eosinophile bodies:* These are the bodies variously named Eosinophile, Fuchsin, Russell or Botryomycotic-like bodies. They are depicted in Figs. 22, 23 and 24, and, in our opinion, represent some chemical substance secreted as a protective agency by the fungus growing in the tissues and may be found lying in the lymphatics, or lymphatic spaces, or in leucocytes sometimes at a relatively considerable distance from the fungus.

In our opinion, these bodies are of peculiar diagnostic help, as we are often compelled to attempt a microscopical diagnosis from a minute piece of tissue removed at some distant station and sent to us preserved in formalin.

If we find these bodies to be present, together with the further evidence in the form of:

1. Cellular exudate (Fig. 27), with its degenerate remains (Fig. 28);
2. Changes in the vessels—Endarteritis and Periarteritis (Fig. 29);
3. Pigment granules,

we feel justified, after very considerable experience, in advising the medical officer in charge of the case that it is not malignant, but fungal in nature, and that the fungus will probably be obtained if a further operation can be performed.

2. *Nocardial filaments:* There is no mistaking a Nocardial

filament by the practiced eye, though it must be admitted that they look at times very like bacilli (Fig. 20), and indeed medical literature contains many instances of this mistake. The spores, if present, look like micrococci, and therefore, when the *Nocardia* is found in the tissues and not in a typical grain, it is apt to be mistaken for these organisms.

3. *Minute grains containing Nocardial filaments* (Fig. 25): These grains are so much smaller in size and fewer in number that, in our experience, they are most difficult to find, and it is this fact which, though clearly emphasizing the relationship of these infections to the mycetomas, also brings out the point that they are worthy of a separate classification.

4. *Other organisms* (Fig. 23): Very rarely we have met with septate broader hyphæ in these sections, and this indicates that in all probability the *Paramycetomas* may in the future be classifiable into the *Paramaduromycoses* and the *Paractinomycoses,* but we do not wish to enlarge upon this section of the subject at present.

We therefore submit, for the consideration of the members of the American Society of Tropical Medicine, the possibility of a series of infections separable from but allied to the *Mycetomas,* and for which we propose the name *Paramycetomas.*

Pseudomycetoma: By this term we mean all those conditions which clinically resemble Mycetoma by the presence of swelling, ulceration and discharge, but differ therefrom in the absence of grains in the pus and in the tissues, and also in the absence of fungi and the eosinophile bodies mentioned above.

This condition is well known to occur in the tertiary stage of *Frambœsia Tropica (Yaws)* and is illustrated by Fig. 496 on page 1187 of the second edition of Castellani and Chalmers' Manual of Tropical Medicine. Breinl, in New Guinea, has described a similar condition, known to the natives by the names Roaki, Buno or Auma, which he considers is a separate clinical entity from Yaws. He says that the foot closely resembles Madura foot, without the presence of the typical grains in the pus.

A similar condition is known to occur in Sporotrichosis and is illustrated by Fig. 64 on page 298 of the well-known work, *"Les Sporotrichoses,"* written by De Beurmann and Gourgerot in 1912. The foot in this case was swollen and painful and showed subcutaneous and deep gumma-like swellings. Fistulæ discharging pus were also present.

Another similar condition has been described by Austregesilo as being due to an *Angiokeratoma* in the foot of a negro in Brazil. The foot was much enlarged with several nodules, from which white material exuded. Microscopical sections enabled a correct diagnosis to be made. The whole condition, however, resembled a Mycetoma, but neither grains nor fungal hyphæ could be found. His paper contains an excellent illustration.

Diagnosis: We now come to two points which we consider to be of considerable clinical importance, viz: the diagnosis and the differential diagnosis.

The characteristic features upon which a diagnosis of Mycetoma may be based are:

1. Tumor formation of any size and appearance and with or without suppuration occurring in any part of the human body.
2. Usually the tumour is chronic in type.
3. In the discharge from the tumor, or in a small portion removed by operation, typical grains can be readily found.
4. In the discharge from the sinuses there is usually a considerable quantity of oily material.
5. On macroscopical section of a large fresh mycetoma a glassy vitreous appearance in the tissues may be observed.
6. Microscopically, eosinophile bodies can usually be found in the portion removed.

The typical features of a *Paramycetoma* are the same as those of a mycetoma, but:

1. Grains may be present, but, if so, are few and small and are readily overlooked.
2. Grains may be absent or unseen, and then the diagnosis depends upon:
    a. The presence of fungal hyphæ or spores.
    b. The presence of the eosinophile bodies.

The differential diagnosis is divided into two considerations:

A. The differentiation of Mycetoma and Paramycetoma from allied conditions.

B. The differentiation of Maduromycosis and Paramaduromycosis from Actinomycosis and Paractinomycosis.

In the first of the above classes the diagnosis has to be made from:

1. Pseudomycetomatous conditions as indicated in the preceding section.
2. Sarcoma, epithlioma and rodent ulcer, by removal of a a portion of the whole of the tissue by operation, followed by microscopical examination, and the subsequent discovery of grains of fungal hyphæ or spores, or of eosinophile bodies. Here we may perhaps be allowed to issue a word of warning against the rapid diagnosis of myeloid sarcoma, because of the presence of giant cells and round cells, together with hemorrhages, or again of the diagnosis of epithelioma, because of the presence of marked acanthosis with cell nests, as both these sets of conditions may be found associated with fungal infections.

More important, however, from the point of view of treatment, is the differentiation between Maduromycosis (including the "Para" variety) and Actinomycosis, also including its "Para" variety, and this can be effected, as stated at the commencement of this paper, by the simple process of flattening a portion of a soft grain in water, by pressing it between a cover slip and slide and examining it with various powers of the microscope.

In the case of a hard black grain, it may be decolorized and softened by caustic soda solution, 40 per cent, by eau de Javelle (freshly prepared), by sodium hypobromite solution (as used in urine testing), freshly prepared, or by antiformin solution. These liquids take some time to act, but eventually the grain becomes soft and decolorized and can be examined as set forth above.

When this simple examination is made it is easy to differentiate between the broad filaments of an ordinary fungus and the thin bacilliform filaments belonging to the Microsiphonales—*i. e.*, to the order in which the Norcadias and Cohnistreptothrices are grouped, and in this way to distinguish a Maduromycosis from an Actinomycosis.

Prognosis and Treatment: It is here that the practical value to the patient of an early and correct diagnosis becomes evident.

In any form of Mycetoma the correct treatment is *to remove the growth in its entirety* when it is young and not fixed to the bones, and at the same time *to remove any enlarged lymphatic glands* which may be found in association with lymphatics coming from the affected area. Cure will be established if this be done completely.

If the growth has gone too far and is involving important regions, from which it is impossible to remove it in its entirety, then the treatment depends upon the diagnosis.

Actinomycosis: Successful treatment has been reported in cases in which potassium iodide in large doses, such as ninety grains per diem, has been administered, and in cases treated by autogenous Nocardial vaccins.

Maduromycosis: So far, nothing short of complete removal, associated with extirpation of the enlarged lymphatic glands, has secured a successful result.

From the above remarks not merely the treatment, but the prognosis, in a given case may be judged.

It appears to us, however, that a practitioner should, whenever feasible, send a portion of the tissue of a Mycetoma or Paramycetoma, as aseptically removed as possible, in sterile normal saline solution at 37° C. to a laboratory, in order that growths may be made from which, if a cure by operation is impossible, the following injections may be prepared for experimental therapeutic use:

a. Vaccins.
b. Extracts of growths by various chemicals.

If he be situate at a distance from a laboratory he should procure therefrom suitable media on which to place the grains, or, if these are absent, scrapings of pieces of affected tissue aseptically removed by operation, and, in the case of grains, washed several times in sterile normal saline solution.

Tubes so inoculated should be sent at once to the laboratory, and the operation should be planned so that the least possible delay in transit shall take place.

If this is systematically done, more knowledge of the value of the various kinds of treatment in operable cases will soon be acquired.

In our opinion, it is the duty of every tropical practitioner to attempt to obtain cultures from all mycetomatous conditions which he meets with in his practice, because of the possible value of such cultures in the treatment of inoperable cases.

Summary: In the above remarks we have endeavored to summarize such knowledge as we possess upon the difficult subjects of Mycetoma and Paramycetoma, with an especial view to the practical bearings of simple diagnosis and treatment, and, with regard to the latter, we have indicated the lines upon which we hope to work in the future.

KHARTOUM, March 14, 1917.

REFERENCES.

The few references given below, in alphabetical order, will enable the reader to obtain an extensive literature if he so desires.

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ILLUSTRATIONS.

Nearly all of these illustrations are much improved if examined by means of an ordinary reading lens.

PLATE I.

FIG. 1. Mycetoma of the foot, of the type named *Black Maduromycosis.* It shows several sinuses opening on the skin and in one of these openings a black grain can be seen. The cut surface depicts a mass of black grains which may with advantage be examined by means of a reading lens.
Reduced about one-half. *Photograph.*

FIG. 2. *Yellow grain* from a *Mycetoma* of the nature of a Yellow Actinomycosis.
X 20 diameters. *Photograph.*

FIG. 3. *Black grain* from a *Mycetoma* of the variety termed Black Maduromycosis.
X 20 diameters. *Photograph.*

FIG. 4. *Red grain* from a *Mycetoma* classified as a Red Actinomycosis.
X 20 diameters. *Photograph.*

FIG. 5. *Black grains* embedded in the tissues of a Black Maduromycosis from which there was no discharge.
X 1.5 diameters. *Photograph.*

FIG. 6. A portion of a hard Yellow grain from a White Maduromycosis softened in Caustic Soda, mounted in water and squashed between the slide and cover slip. Note the broad segmented hyphæ and the one oval chlamydospore.
X 375 diameters. *Photomicrograph.*

FIG. 7. A portion of a soft Yellow grain from a Yellow (White) Actinomycosis treated as described in Fig. 6. Note the bacilliform hyphæ which are the thin non-segmented Nacordial filaments so apt to be mistaken for bacilli. Note also the absence of chlamydospores.
X 600 diameters. *Photomicograph.*

FIG. 8. Section of a grain from a Black Maduromycosis showing the absence of Aspergillar heads.
X 250 diameters. *Photomicrograph.*

FIG. 9. *Nocardia convoluta.* Growth on potato showing buff colored growth and absence of pigmentation of the medium.
About natural size. *Photograph.*

FIG. 10. The *Aleuriospore* form of the conidial type of spore.
X 800 diameters. *Photomicrograph.*

FIG. 11. *Glenospora sœmoni* grown on clear maltose agar for 12 days in an uncapped tube at 30° C.
Natural size. *Photograph.*

FIG. 12. *Glenospora khartoumensis* grown on the same media, at the same time and place, and under exactly similar conditions as Fig. 11.
Natural size. *Photograph.*

FIG. 13. Characteristic aerobic growths of *N. convoluta* obtained direct from grains after being placed upon inspissated ox blood serum for 12 days. This illustrates the ease with which certain Nocardias can be grown direct from grains.
Natural size. *Photograph.*

FIG. 14. Another characteristic growth of a Nocardial fungus in the form of puff balls in glucose peptone. The puff balls have the peculiar habit of clinging to a glass tube inserted into the medium and also on the damp glass of the test tube higher than the level of the liquid medium.
Natural size. *Photograph.*

PLATE II.

FIG. 15. *Arthrospores* of Nocardia convoluta.
X 1,940 diameters. *Photomicrograph.*

FIG. 16. Section of a grain of Nocardia convoluta showing the absence of clubs.
X 82 diameters. *Photomicrograph.*

FIG. 17. Growth on Glucose Agar of the organism causing *Red Actinomycosis.*
Reduced. *Photograph.*

FIG. 18. Section of a grain of Nocardia bovis showing the presence of clubs.
X 620 diameters. *Photomicrograph.*

FIG. 19. Cellular exudate of a typical Mycetoma, Actinomycotic Division, showing giant cells, with and without fungal elements, plasma cells and lymphocytes.
X 140 diameters. *Photomicrograph.*

FIG. 20. Small vein completely blocked by Nocardial filaments from a Paramycetoma.
X 550 diameters. *Photomicrograph.*

FIG. 21. Paramycetoma of the face.
Reduced. *Photograph.*

FIG. 22. Single *Eosinophile body* lying in a cell from a Paramycetoma.
X 750 diameters. *Photomicrograph.*

FIG. 23. Separate and variously sized *Eosinophile bodies* from a Mycetoma.
X 1,440 diameters. *Photomicrograph.*

FIG. 24. A cluster of Eosinophile bodies in a cell from a Paramycetoma.
Low magnification. *Photomicrograph.*

PLATE III.

FIG. 25. Peculiar Nocardial grain from a Paramycetoma of the type of Paracinomycosis.
X 400 diameters. *Photomicrograph.*

FIG. 26. Septate broad filament in a Paramycetoma of the type of a Paramaduromycosis. There were giant cells in this specimen which somewhat resembled a myeloid sarcoma.
X 1,400 diameters. *Photomicrograph.*

FIG. 27. Cellular exudate in a Paramycetoma. Note the plasma cells and lymphocytes.
X 450 diameters. *Photomicrograph.*

FIG. 28. Commencing degeneration of the cellular exudate shown in Fig. 27.
X 450 diameters. *Photomicrograph.*

FIG. 29. Periarteritis and Endarteritis in a vessel from a Mycetoma. Similar conditions can be seen in Paramycetoma.
X 400 diameters. *Photomicrograph.*

FIG. 30. Juxta-articular nodules near the left elbow and knee in a Sudanese woman. The opposite elbow and knee were similarly affected.
Reduced. *Photograph.*

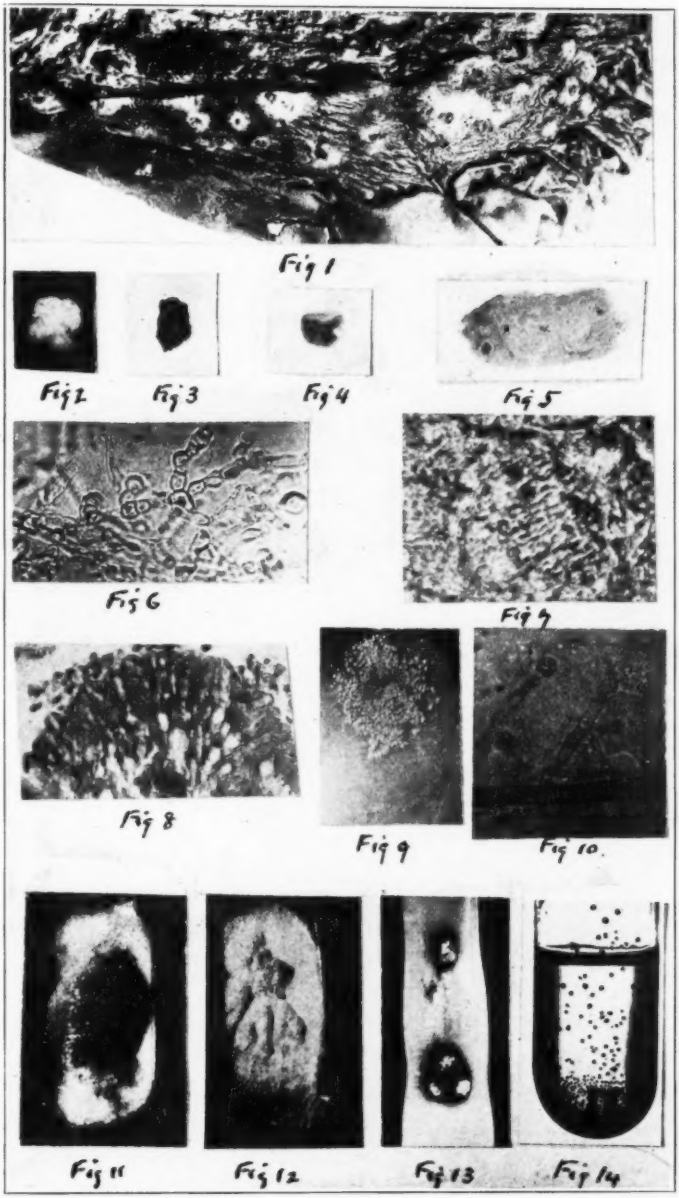
Fig 1
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Fig 14

PLATE I.

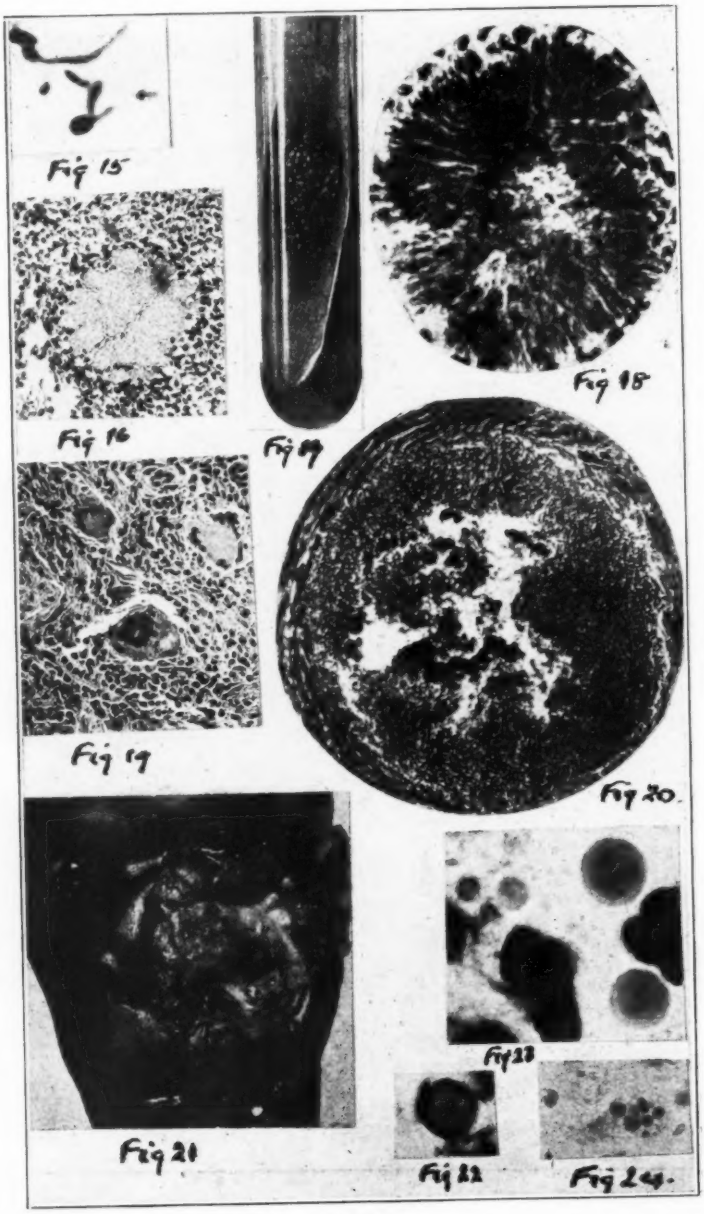
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Fig 21
Fig 22
Fig 23
Fig 24.

PLATE II.

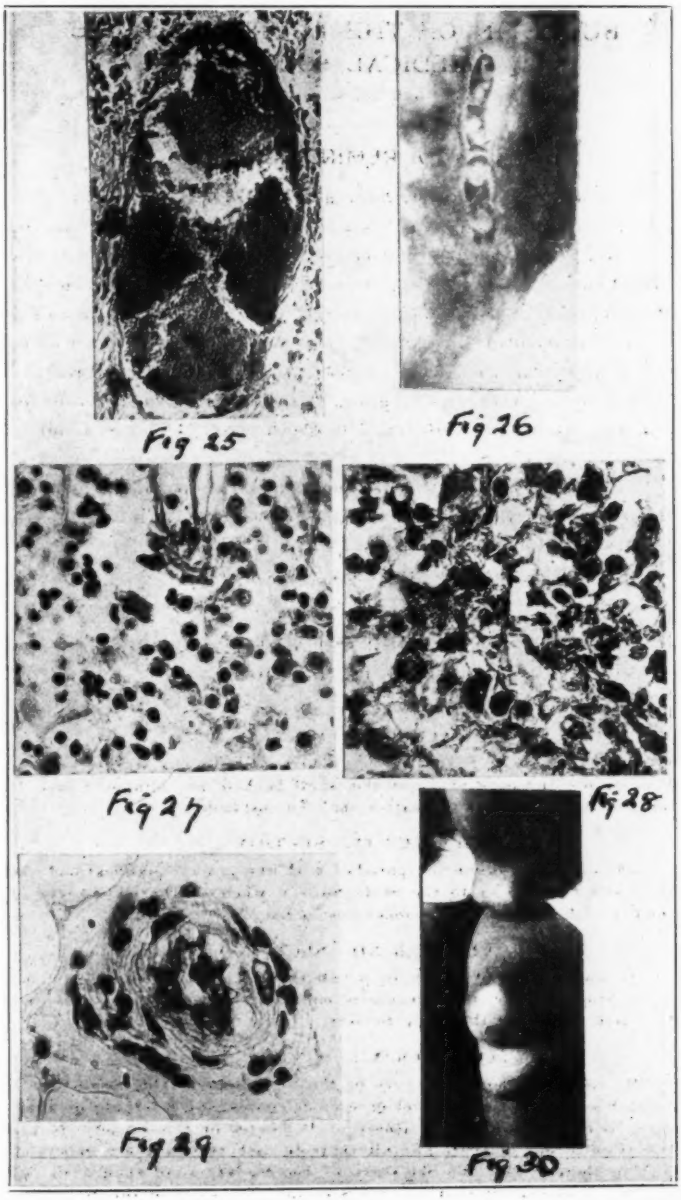

PLATE III.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

A REMINDER.

The membership of the Louisiana State Medical Society for 1917 is within eight of being one thousand. It is to be hoped that the eight additional members will be secured, in order to complete the "One Thousand Membership," which has been the goal to which we have been working for the past several years. Any assistance on the part of the members in securing these additional members will be greatly appreciated by the State Society. It will also be a credit to every member whose name appears on the membership roll for 1917 to have his name included in the largest membership roll in the history of the Society.

While we are nearing the end of the year it is pertinent to recall to our minds certain laws of the Society which have a direct bearing on each individual membership.

The following laws are, therefore, presented:

"FISCAL YEAR."

"The fiscal year of the Society shall begin January first."

CHAPTER IX. SECTION 2.

"Dues must be paid in advance."

CHAPTER IX. SECTION 3.

"Any District or Parish Society which fails to pay its assessments on or before the date above stated, shall be held as delinquent, and if not paid in thirty days thereafter shall be suspended."

CHAPTER IX. SECTION 4.

"Physicians in organized parishes with the proper qualifications can send their dues direct to the State Society when the Parish Society in which parish they reside becomes suspended."

CHAPTER XII. SECTION 10.

"In any organized parish in which there are ten or more members of the State Society, these members must effect organization or forfeit their membership in the State Society."

CHAPTER XII. SECTION 12.

"At some meeting in advance of the fiscal year of this Society each Parish Society shall elect a delegate or delegates, and alternate or alternates, to represent it in the House of Delegates of this Society, in the proportion of one delegate and alternate to each twenty-five members or fraction thereof, and the Secretary of the Society shall send a list of such delegates and alternates to the Secretary-Treasurer of this Society."

CHAPTER XIV. SECTION 8.

"Medical defense by the Society will not be available to those who are delinquent or to those who have not paid the annual dues of the Society prior to the rendering of services for which indemnity is asked."

In explanation of the last law quoted, it means that if, on January 1, 1918, a member treated a case out of which a suit would come, and the said member's dues were *received by the State Society on January 2, 1918,* the State Medical Society could not, in accordance with its by-laws, give said member the protection of medical defense.

This also holds good for the JOURNAL. The January issue of the JOURNAL will be sent on January 1, 1918, to those members in good standing on January 1, 1918, namely: to those whose dues are received at the office of the State Society on or before January 1, 1918.

Let us, therefore, enjoy our membership and the benefits derived therefrom in the Louisiana State Medical Socity for the 365 days of 1918, without any lapse either in membership or benefits.

NEWS AND COMMENT

HOSPITAL BEQUESTS.—Under the will of Mrs. Helen Cossitt Juilliard, the Lincoln Hospital and Home, New York, will receive $100,000 and the New York Orthopedic Hospital $50,000. One-fourth of the residue of her estate and $100,000 are to go to St. John's Guild. These bequests are not to be paid until the death of Mr. Juilliard.

EXEMPTION OF MEDICAL STUDENTS.—A movement toward obtaining exemption for dental students in the same way that it has been granted to medical students has been begun, with the understanding that they shall become members of the reserve and subject to call.

MILITARY SURGEONS CHOOSE OFFICERS.—At the annual meeting of the Association of Military Surgeons, held in Fort Benjamin Harrison, Indiana, October 9, Dr. George A. Lung, medical director of the United States Navy, was elected president; Colonel Edward Munson was elected to his third term as secretary, and Assistant Surgeon-General W. Colby Rucker, of the United States Public Health Service, was named treasurer.

COMMENDS BRAVERY OF AMERICAN SURGEONS.—The Associated Press recently received a cablegram from the British front in France and Belgium, praising the American surgeons in the advanced casualty clearing stations. According to report, several surgeons and assistants worked steadily at Ypres-Menin while shells were breaking about them. Those who witnessed the scene report that a greater demonstration of coolness had never been seen than that shown by these men.

HEREDITY AND CANCER.—A committee of life insurance companies, coöperating with the American Society for the Control of Cancer in a recent investigation, found from the records of a large life insurance company that, among 20,000 applicants for life insurance whose parents had both died of cancer, only four had cancer. Out of 492 instances in which one or both parents had died of cancer, 42 per cent had died of some other disease, 56 per cent were living at the average of 61, and less than one per cent—four out of 492—had died from cancer.

THE SOUTHERN GASTRO-ENTEROLOGICAL ASSOCIATION will hold its next meeting in Memphis, Tenn., November 12, 1917. A cordial invitation is extended to the profession to attend the meeting. For further information, write to the secretary, Dr. Marvin H. Smith, 459 St. James Building, Jacksonville, Fla.

SOUTHERN TUBERCULOSIS CONGRESS.—The National Association for the Study and Prevention of Tuberculosis will hold a Southern tuberculosis conference in Chattanooga, Tenn., November 9 and 10, 1917.

DENTAL SURGEONS ORGANIZE.—The Association of Military Dental Surgeons of the United States has been organized, with offices in San Francisco. Dr. John D. Milliken is president of the association, which publishes a quarterly bulletin of dento-military news.

CARREL HOSPITAL OPEN.—The Carrel Hospital, on the grounds of the Rockefeller Institute, New York, was recently opened. This hospital will train United States army and navy surgeons in the technic of the use of the Dakin-Carrel solution for infected wounds.

SCARCITY OF RUBBER GLOVES IN ENGLAND.—Unless the United States is allowed to send larger supplies, the shortage of rubber operating gloves in England is likely to result very seriously. The Board of Trade has restricted the importation and the army and navy have been supplied under special license. The British Med-

ical Association has made an appeal to the Board of Trade to allow the civil hospitals to get supplies from the United States.

The American Association of Clinical Research elected at its recent meeting in Boston the following officers for the ensuing year: President, Dr. Marshall W. McDuffie, New York; first vice-president, Dr. Roger M. Griswold, Kensington, Conn.; second vice-president, Dr. Joseph A. Weitz, Montpelier, Ohio; secretary-treasurer, Dr. James Krauss, Boston. The next annual meeting of the association will be held in New York, in October, 1918.

The Alvarenga Prize of the College of Physicians of Philadelphia, amounting to about $250, will be made on July 14, 1918, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays may be upon any subject in medicine, but cannot have been published. They must be typewritten, and, if written in another language, should be accompanied by an English translation, and must be received by the secretary of the college by May 1, 1918. Essays must be sent without signature, but plainly marked with a motto and be accompanied by a sealed envelope, the motto of the paper outside and the name and address of the author within. It is a condition that the successful essay shall remain in possession of the college; other essays will be returned upon application. The Alvarenga prize for 1917 has been awarded to Dr. Wilburt C. Davison, Baltimore, for his essay entitled "The Superiority of Inoculations with Mixed Triple Vaccin Over Successive Inoculations with the Single Vaccins." Francis R. Packard is secretary, 19 South Twenty-second street, Philadelphia.

Personals.—Dr. Rupert M. Blakely, of New Orleans, is now serving in the Medical Reserve Corps.

Dr. Isadore Dyer, Dean of the School of Medicine, Tulane University, attended the meetings of the National Board of Medical Examiners and of the Chairmen, Medical Section, Committee of National Safety, which were held in Chicago during the past month.

Removals.—Dr. Peyton Randolph, from 520 Exchange Building, Memphis, Tenn, to Georgetown, Texas.

Dr. S. B. Matthews, from Urania to Alexandria, La.

Dr. W. A. Love has moved his office to the Cusachs Building.

Marriages.—On September 22, 1917, Lieutenant Newton W.

Sentell, graduate of Tulane School of Medicine in 1914, to Miss Elizabeth Praeger, of Alexandria, La.

On October 18, 1917, Dr. Joseph Grover Mitchell to Miss Maude Henderson, of Junction City, Ark.

DIED.—On October 10, 1917, Dr. Henry P. Lingo, of Clinton, La.

BOOK REVIEWS AND NOTICES

All new publications sent to the JOURNAL *will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the* JOURNAL *to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.*

Manual of the Diseases of the Eye, for Students and General Practitioners, by Charles H. May, M. D. Ninth edition, revised. Wm. Wood & Co., New York, 1917.

This deservedly popular textbook for students and general practitioners has now reached its ninth American edition. It has always been intended for such readers, who need to know the essentials of ophthalmology. With this end in view, the author encountered the usual difficulty of saying enough without saying too much. It is easy to write a bulky volume, laden with controversial matter and rare and useless cases; the trouble lies in selecting just that part of an abundant store of material that will supply the needs of a given audience without embarrassing the reader with unavailable knowledge. Dr. May has accomplished this feat in a very gratifying manner, as is shown by the large number of editions of foreign translations of his work since 1900, as follows: Two German, three Italian, four British, three French, three Dutch, four Spanish, two Japanese, and one Chinese.

In preparing this latest edition, the author has carefully revised every part of it, and all alterations and additions have been incorporated that were necessary to bring the work abreast of the most recent developments in ophthalmology. McSHANE.

Pharmacology and Therapeutics, by Horatio C. Wood, Jr., M. D. Second edition. J. B. Lippincott Company, Philadelphia and London.

This necessary revision of a standard text on pharmacology and therapeutics presents the contents in the same classification as its predecessor, grouping drugs which are related in their physiological action and, at the same time, the pharmacology and therapeutic uses of the drugs are presented.

A number of new remedies are discussed in this new edition, which conforms, in the main, to the arrangement and text of its predecessor.

As a reference or as a text, this book must remain one of those among the accepted authorities. DYER.

Histology of Medicinal Plants, by William Mansfield, A. M., Phar. D. John Wiley & Sons, New York.

The long experience of the author as a teacher in the College of Pharmacy of Columbia University makes his field particularly certain and of interest. While the material offered is not of great extent, its content is excellent and the illustrations are definitely of service to the student of analytical botany. This is especially true where the interest lies in the systematic study of medicinal plants. The book should be of value just now, when a growing interest in the cultivation of medicinal plants is being evidenced in the United States. DYER.

Cancer: Its Cause and Treatment, by L. D. Bulkley, M. D. Published by Paul Hoeber, New York.

This volume of 282 pages is the second book on this subject by this author and is drawn from thirty years' experience in private practice and in the clinic of the New York Skin and Cancer Hospital.

It is most interesting and instructive, dealing entirely with the medical aspect of this great scourge, and for that reason is of interest alike to the surgeon and physician.

This volume is very refreshing in dealing with this great disease, when, in this most active surgical period, the death rate has risen from sixty to over eighty per hundred thousand in the last fifteen years. Statistics show that 90 per cent of all afflicted with cancer ultimately die a cancer death. Surgery, for that reason, is indicted as having failed to cure or control its ravages.

The increase of cancer has been proportionate to heart disease, nephritis and apoplexy, which have all risen about 20 per cent in the last fifteen years; while tuberculosis, under proper hygiene and dietetic handling, has fallen off 50 per cent.

After the review of many facts, the conclusion is drawn that a dyscrasia of the blood and tissues, the results of faulty diet and hygiene, are at the bottom of the trouble. Bulkley regards the consumption of animal protein as a source of this derangement of metabolism, which permits and favors, if it does not actually cause, the development of cancer. Coffee and alcohol are also incriminated, and these facts are brought out in a rather convincing way, supported by case reports in which many cured cases are shown.

The frequent relation between cancer and rheumatism also seems proven. It is recognized that obesity results from some nutritive derangement and that cancer is practically incurable in these subjects. Also, in diabetes, a nutritive disorder, cancer is very frequent. Deranged, disturbed, perverted metabolism is at the bottom of all erroneous growth, whether it be obesity or a benign or malignant growth.

The study of the urine and blood is particularly interesting. The urine is usually acid and deficient in volume and total solids eliminated.

In a study of the cases treated, constant records are kept of both blood and urine, and any improvement in the patient's condition is coincident with a return of both to normal brought about by medical means. This, with the avoidance of all animal protein, is the basis of treatment.

While the author does not recommend surgical treatment, the advisability of the combination of medical with surgical measures is in-

timated. This book is well worth the careful attention of the entire profession. CARROLL W. ALLEN.

Eye, Ear, Nose and Throat. A Manual for Students and Practitioners, by Howard Charles Ballenger, M. D., and A. G. Wippern, M. D. New, second edition, thoroughly revised. Lea & Febiger, Philadelphia and New York, 1917.

This is a handy manual for the use of students and general practitioners. The subjects are considered chiefly in their practical aspects. The information it contains is stated concisely, but not too much so to be of any use. Controversial matter is put aside. The authors have chosen their material wisely, which we would expect from men whose work as teachers gives them an insight into the needs of those for whom the book is written. The call for a second edition indicates that it has met with a cordial reception by those for whom it was intended.

McSHANE.

Textbook of Ophthalmology, by Hofrat Ernst Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation from the twelfth German edition. Completely revised and reset, with numerous additions specially supplied by the author, and otherwise much enlarged. By Alexander Duane, M. D., Surgeon Emeritus, Knapp Memorial Hospital, New York. 462 illustrations. Fifth edition. J. B. Lippincott Company, Philadelphia and London.

Fuchs' textbook has been at the forefront of ophthalmological literature ever since it was first given to the world. Successive editions added all that was valuable in ophthalmology, and thus the book was always a faithful reflex of the science at the time of its publication. No oculist's library is complete without a copy of Fuchs' work. For twenty-seven years this book has been the standard in ophthalmology. On the literary side, it is so well written that the effort to learn is greatly diminished.

War may interfere with many things, but science does not bow down to Mars. Though no new German edition is contemplated, the translator, Dr. Duane undertook to make additions rendered necessary by recent progress, and he also incorporated new material furnished by the author himself. In this way the present edition is a new work. Alterations in the arrangement of the text have also been made, which increase its value as a work of reference.

It is impossible to give an analysis of this great work, for even a brief analysis would have to cover the entire field of ophthalmology.

Fuchs' book is encyclopedic in character, and anything pertaining to ophthalmic science that is not found there either cannot be found elsewhere or else is a negligible quantity.

The last section (on operations) is large enough to constitute a separate work in itself. Dr. Duane has here contributed materially to the text, and in all sections the able hand of the translator has striven to maintain the high standard of excellence that has always been the chief characteristic of Fuchs' work. McSHANE.

PUBLICATIONS RECEIVED

LEA & FEBIGER, Philadelphia and New York.

A Treatise on Orthopedic Surgery, by Royal Whitman, M. D., M. R. C. S., F. A. C. S. Fifth edition, revised and enlarged.

Progressive Medicine. Edited by Hobart Amory Hare, M. D., assisted by Leighton F. Appleman, M. D. September 1, 1917.

C. V. MOSBY COMPANY, St. Louis, 1917.

Diseases of the Skin, by Richard L. Sutton, M. D. Second edition, revised and enlarged.

The Prescription, by Otto A. Wall, Ph. G., M. D. Fourth and revised edition.

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

The Surgical Clinics of Chicago. Vol. 1, No. 4. August, 1917.

THE MACMILLAN COMPANY, New York, 1917.

Clinical Cardiology, by Selian Neuhof, B. S., M. D.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

Public Health Reports. Vol. 32, Nos. 36, 37, 38 and 39.

Common Colds, by W. C. Rucker.

MISCELLANEOUS.

The Conversion of Hamilton Wheeler, by Prescott Locket. (The Pandect Publishing Company, Bloomington, Ill., 1917.)

Fortieth Annual Report of the Department of Health of the State of New Jersey, 1916. (State Gazette Publishing Company, Trenton, N. J., 1917.)

International Health Board. The Rockefeller Foundation. Third Annual Report. (61 Broadway, New York, 1917.)

The Work in Europe of the American Red Cross. (American Red Cross, Washington, D. C.)

China Medical Board. Second Annual Report. (61 Broadway, New York, 1917.)

Monthly Bulletin of the Department of Health, City of New York.

Mortality of Negro Babies in New York City, by Jacob Sobel, M. D. (Department of Health, City of New York.)

A Milk-Borne Outbreak of Typhoid Fever on Staten Island. (Department of Health, City of New York.)

REPRINTS.

The Teaching of Protozoology to Medical Students, by Frank G. Haughwout.

Resultados Obtenidos Con la Prueba de la Phenolsulphonthalein, by Dr. Juan Iturbe.

The Established Value of Radium as a Therapeutic Agent, by Dr. W. H. B. Aikins.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for September, 1917.

CAUSE.	*White.*	*Colored.*	*Total.*
Typhoid Fever	6	2	8
Intermittent Fever (Malarial Cachexia)	2	1	3
Smallpox	------	------	------
Measles	------	------	------
Scarlet Fever	------	------	------
Whooping Cough	------	2	2
Diphtheria and Croup	------	------	------
Influenza	1	1	2
Cholera Nostras	------	------	------
Pyemia and Septicemia	------	------	------
Tuberculosis	39	39	78
Cancer	19	6	25
Rheumatism and Gout	3	1	4
Diabetes	------	1	1
Alcoholism	1	------	1
Encephalitis and Meningitis	1	------	1
Locomotor Ataxia	------	------	------
Congestion, Hemorrhage and Softening of Brain	20	15	35
Paralysis	2	2	4
Convulsions of Infancy	------	------	------
Other Diseases of Infancy	13	11	24
Tetanus	------	5	5
Other Nervous Diseases	6	------	6
Heart Diseases	53	42	95
Bronchitis	------	2	2
Pneumonia and Broncho-Pneumonia	13	12	25
Other Respiratory Diseases	2	2	4
Ulcer of Stomach	------	------	------
Other Diseases of the Stomach	2	1	3
Diarrhea, Dysentery and Enteritis	18	13	31
Hernia, Intestinal Obstruction	3	2	5
Cirrhosis of Liver	4	4	8
Other Diseases of the Liver	4	1	5
Simple Peritonitis	------	------	------
Appendicitis	2	2	4
Bright's Disease	15	15	30
Other Genito-Urinary Diseases	10	10	20
Puerperal Diseases	2	2	4
Senile Debility	3	1	4
Suicide	7	------	7
Injuries	21	19	40
All Other Causes	16	13	29
TOTAL	288	227	515

Still-born Children—White, 24; colored, 31; total, 55.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per Annum for Month—White, 12.52; colored, 26.70; total, 16.34. Non-residents excluded, 13.84.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 29.98

Mean temperature . . . . . 78.

Total precipitation. . . . . 2.69 inches

Prevailing direction of wind, northeast.